

A N
ACCURATE TRANSLATION
O F
Dr. MEAD'S Latin Treatise
O N
The SMALL-POX and MEASLES.

To Which is Annexed

A Version of the COMMENTARY of RHazes,
a Celebrated ARABIAN Physician, on the
same Distempers.



L O N D O N:
Printed in the YEAR 1756.





THE PREFACE.



Penned a great part of this Treatise several years ago, and had long since finished and published the whole, had I not been interrupted by concerns of moment, which entirely took up what little leisure I had. But this delay, and adjournment of the work, will turn out, perhaps, of advantage to the reader; as whatever inconvenience attends a length of years, yet that is generally ballanced by the acquisitions gained in respect of science, and experience. However, I will now briefly

communicate the motives that induced me to undertake this labour.

IN the year MDCCXVII, the learned Dr. Freind gave an edition of the *first and third Books of Hippocrates concerning epidemical diseases*, to which he subjoined *nine Commentaries on Fevers*. The *seventh* of these is *Of purging in the putrid fever, that supervenes in the confluent Small-pox*. Now to this, as a confirmation of his opinion, he added *Epistles* sent him by four physicians; among which he assigned a place to one he had received from me. For, after I had been a physician to *St. Thomas's Hospital* for some years, in MDCCVIII I observed several, struggling with the *Small-Pox* of a very malignant complexion, on their being seized the ninth or tenth day, or sometimes sooner, with a looseness, contrary to all expectations, to recover. From whence I was determined to try, how far a gentle laxative about the end of the distemper would go towards relieving those, who through the whole course of it (which is very often the case) had been costive in their body. The thing succeeded according to my wishes, and I cured a number by this method, who were in the most imminent danger.

THERE was at that time, and, indeed, to his dying day, the most perfect friendship between

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between the just-mentioned Dr. *Freind* and myself: and, as we had almost daily conferences on physical matters, I acquainted him with this affair, who approved my conduct. And, as he himself not long after, in conjunction with two other physicians of great name and character, had the care of a certain young gentleman of distinction terribly afflicted with the *Small-Pox*, he had a mind to try this practice. But they obstinately opposed such a step; till at length on the fourteenth day from the eruption, when convulsions coming on with a lethargy demonstrated that affairs were in the last extremity, they consented to have his body loosened by a mild potion; which was effected to the great relief of the patient. On which account Dr. *Freind* was for repeating it; which not being permitted, seven days after, through the violence of the distemper, he died. The Dr. has himself given a narrative of this whole matter more at large.

AFTER this, various reports were spread abroad touching that transaction, and our physicians formed themselves into parties, some commending, others censuring, Dr. *Freind's* conduct: who, imagining his reputation to be thereby called in question, was resolved to set about the vindication of it. He therefore asked it as a favour of me, to give him in writing the sentiments I had been lately

lately communicating to him by word of mouth. I looked upon it as execrable, to refuse my friend any thing of that nature; who put my *Schedule* into the hands of the great Dr. *Ratcliffe* in order to his perusal, a gentleman of distinguished parts, no less than of consummate experience in his profession, and one that honoured me with great intimacy. Now Dr. *Freind* suggested to Dr. *Radcliffe*, that he intended his defence for the press. Whereupon Dr. *Radcliffe* applied to me in behalf of the Doctor, for leave to annex my little sketch to his treatise; which I could not refuse him. But, when two or three sheets were now printed off, through the persuasion of some of his friends, he dropped his design, and suppressed both his own and my copy, locking it up in his escutore, till the time came round for the publication of the aforementioned *Commentaries*. Now, when his own work was on the anvil, he again entertained some thoughts of sending my *Epistle* into the world at the same time. Therefore I took it in hand afresh, put it on a Latin dress, (for I wrote it originally in English) enlarged it, and worked it into the form, wherein it now makes its appearance.

It very rarely happens, that any new method of cure whatever, in regard of any one disease, pleases the palate of every body; tho' Dr. *Freind* and myself not only never varied from this practice, which as I said,

we followed very early ; but several besides, both in town and country, to whom we had revealed the secret, put it to the trial with happy success. But every place is furnished with a set of malevolent mortals, who employ all their forces in the bespattering and defaming other men's characters ; as if they imagined they were procuring to themselves a share of reputation, proportionable to the detraction with which they are loading others. The doctor's book therefore seeing now the light, some of these chaps immediately fly to arms, as if their lives and fortunes were at stake. The ring-leader of these gentry was one *Woodward*, professor of physick at *Gresham-College* : who, having served an apprenticeship to a linnen-draper, after that, scraped together a parcel of cockle-shells, pebbles, minerals, and the lord knows what trumpery of the like fossile tribe, and so took it into his head, forsooth, to set up for a philosopher : and, having worked himself into a certain physician's family, turned out, an't please you, through the preposterous grammercy of his friends, a consummate graduate doctor. A saucy, proud, pragmatistical coxcomb, and a creature who could not bear, that any one besides himself should run away with the least scrap of commendation. This fellow, then, in a pamphlet *Concerning the state of physick*, which he had scribbled in his mother-dialect, raved like a madman at *Dr. Freind*, and those who sided with him, and directed
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the abundance of his spleen against me in an especial liberal manner: bidding strong defiance, not from his being armed with reason and experience, which he was an utter stranger to, but by discharging whole vollics of ribaldry, and downright billingsgate. I am no ways, by any mention I can make of it, fond of reviving an infamous libel, long since condemned to an eternal oblivion: whose author was immediately rendered very genteely by his antagonist, the doctor, the glaring object of publick scorn and ridicule. Nor, indeed, had I stained my paper with this frippery, had not the arrogance and intolerable vanity of this conceited man extorted thus much from me. And if, perchance, I may seem to have dwelt too long upon the subject, I have only gone through the disagreeable task with a view of pointing out the genuine author of this method of cure; and shewing how destitute of any foundation all those scandalous, vindictive, speeches were, that came out of the mouth of that abusive animal,

As to this *Treatise*, I have rather chose to express myself with perspicuity, than to make use of any rhetorical embellishments in respect of my stile, having delivered whatever I have enjoined briefly and distinctly. And to those precepts, which I have laid down in regard of purgative medicines, I have sub-joined

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joined several cautions and provisos for the sake principally of younger physicians, who are apt with too great a propensity and boldness to copy, and draw into practice, whatever is started a-new, by those at least, whom they hold in any degree of esteem. For there is nothing in nature of universal, unexceptionable, utility; and it is often a point of no less judgment *nil laedere*, than *aperire* (1). Nor here only, in reality, but through the whole extent of our art, a physician ought always to remember that of the poet:

Nil prodest, quod non laedere possit idem (2).

Nothing in nature any good conveys,
But what may also hurt unnumber'd ways.

AFTER I had wrote this little work, I began to think, that I should perform a task neither unprofitable nor disagreeable to physicians, should I annex to it *Rhazes's* treatise on the *Small-Pox* and *Measles*, translated from his original Arabic into Latin. For in that Commentary are a greatmany things set out at large, relating as well to the nature, as the cure, of these diseases: which indeed, allowing for the difference in point of times and climate, will be found not much unlike our

(1) *Vid.* Hippocrat. Epidem. lib. 1

(2) *Ovid.* Trist. lib. 11. v. 266.

own manner of proceeding ; so that I really congratulate myself on having my own opinion confirmed by a first-rate physician of the age, wherein he lived. And, indeed, I have more than once wondered, that there never was extant a printed copy of that book before, as I know of, either in Arabic, or translated from the Arabic into Latin. *Robert Stevens* was the first who gave a Greek edition of it, which he subjoined to *Alexander Trallian's Work*, A. D. MDCXLVIII, with this title : 'Ραση Λόγος περί νοσημάτων. This was turned into Latin by three interpreters ; the first of whom was *George Valla of Placencia*, whose version was published at *Venice* in the Year MCCCCXCVIII, and very often afterwards. The next to this was that of *John Gvinter of Andarnac*, which was launch'd into light at *Strasbourg* in the year MDCXLIX. To both these succeeded the translation of *Nicholas Machelli*, a physician of *Modena*, which came out at *Venice* in the year MDLY, and MDLXXXVI. (1) But the Greek Copy was not derived from the Arabic, but the Syriac, as is plain from the title ; the version, as it is reasonable to believe, having been accomplished for the use of the common people. On which account, that there are several things partly omitted in it, partly misinterpreted, through the blun-

(1) Vid. *Fabric. Bibl. Græc. V. xii. p. 692.*

dering either of the Syriac, or the Greek, interpreter, will easily appear very evident to whoever shall compare it with the translation, I now publish from an Arabic manuscript. How I came by that manuscript, I am briefly going to shew,

HAVING made a fruitless enquiry in our publick libraries after this book in Arabic, I wrote to the celebrated, and to me always the most friendly, *Dr. Boerhaave*, professor of physick in the university of *Leyden*; intreating him to inform himself, if, in the library of that university, which I knew was well furnished with Arabian manuscripts, there was any such thing as lighting on a copy: That gentleman, in some short time, very obligingly transmitted me one, transcribed by their Arabic professor, tho' very faulty in several places. This I put into the hands of two eminent men successively, in order for each of them to make a separate translation of it. One of these was *Solomon Negri*, born at *Damascus*, a perfect master of all the oriental languages; the other was *John Gagnier*, the famous professor of Arabic at *Oxford*, each of whom diligently performed the task assigned him. But as, by comparing these versions, I remarked, that they sometimes varied one from the other, not only in the form of expression, but even also in respect to the sense; I, not understanding a syllable of Arabic myself,

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myself, was entirely at a loss which to prefer. Wherefore I begged the favour of my friend, Dr. *Hunt*, professor of Arabic now for some years at *Oxford*, and very lately also chosen professor of Hebrew, a gentleman among other parts of science highly distinguished for this kind of literature, to undertake this province; who, having accurately collated them with the original, worked up the translation, I have here published, and had no doubt given a better, had he met with a correcter copy. Do you, reader, enjoy these my either labours, or amusements.

London, Sept.
28th, 1747.



ADVER.



of that sort in the skin, were what we now
 term the Small-Pox, do not merit the least
 attention: it being absolutely incredible, that

Small-Pox and Measles.

those first masters of our art, who were to
 should content themselves with the bare
 mention of this disorder, and not rather
 have displayed it in its full and proper

CHAP. I. had colour, and adorned with such copious
 Of the Origine of the SMALL-POX.



N treating this subject of the
Small-Pox, I shall begin my dis-
 course with a brief enquiry, as far
 as what intelligence may be ga-
 thered from the records and annals of for-
 mer ages, into the origine of this distemper;
 and by what means it has been propagated
 from the climate, where it took its rise, into
 almost every part of the universe. For thus
 will the nature of it be placed in a clearer
 point of light; and the method, to be laid
 down hereafter, in regard of answering the
 indications of cure, be established on a more
 manifestly proportioned basis.

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THAT this disease is now in its kind, that is, was unknown to the ancient, both *Greek* and *Roman* physicians, is a matter admitting no manner of contest. For those, who contend, that the *aripax*, *emolus*, and *karbuncle* of that sort in the skin, were what we now term the *Small-Pox*, do not merit the least attention: it being absolutely incredible, that those first masters of our art, who were so accurate and circumstantial in describing and distinguishing the signs of all other diseases, should content themselves with the bare mention of this disorder, and not rather have displayed it in its full and proper colours, had an evil so abhorrent to nature, and endued with such contagious powers, ever occurred to them in practice.

FROM the writings therefore of the *Arabian* physicians must be deduced the first traces of this distemper. By far the foremost amongst these in eminence and abilities was *Rhazes*, who flourished about the year, according to the Christian calculation, DCCCE. In a huge volume he compiled, that bears the title of *Continens*, (wherein is amassed a whole magazine of medical treasure, collected as it seems to be from his *Adversaria*) he tells us, that a certain person, named *Aaron*, had composed thirty physical treatises; wherein, amongst other things, were explained the signs of the *Small-Pox*; and the different



different kinds of that disease, together with the method of cure (1). He was a native of *Alexandria*, and, in the reign of *Mahumed*, anno DCXXII, was following his profession of physic (2). Hence the learned Dr. *Fraind* conjectured, that the *Small-Pox* might, perhaps, have first sprung up in *Egypt* (3). But *John James Reiske*, a man thoroughly versed in *Arabia*, discovered the origine of this malady to be somewhat more antient; who assures us, he had read in an old *Arabian* manuscript, he had met with in the university library at *Leyden*, a passage to the following effect: viz. *This year the Small-Pox and Measles made their first appearance in Arabia* (4). Now the year here specified was the DLXXIII from the birth of our Saviour, the period from whence is dated the nativity of *Mahumed*.

But, after maturely considering and weighing the whole affair, I am rather apt to imagine, that there are certain diseases peculiar to particular countries, where they exert their rage through a sort of a native faculty. These were styled by *Hippocrates*, or epidemical distempers; some of which, produced in various parts of *Europe* and *Asia* by the vitious qualities as well of the air,

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as

(1) *Centin.* 419. 2. (3) *Opus.* pag. 330.
(2) *Vide in Alpharai* (4) *Disput. inaug. Lug-*
Histor. pag. 99. *duni Bet.* MDCCXLVI.

as the soil, and water drank by the inhabitants, he very exactly describes (1).

The more modern Greeks have given them the appellation of *whim* (or popular disorders) (2). These I am of opinion, through an uninterrupted essential effect of the nature of things, have ever been more or less prevalent in their respective climates.

Now, to a certain species of them, as is confirmed to us by experience, contagion is inherent, which is often conveyed into very remote countries by means adapted to its nature. For some of these diseases will not only affect the sound by their morbid contact, but are likewise endued with a faculty of scattering destruction by inconceivably subtle particles exhaling from their pestiferous substances; and, insinuating themselves into bodies of a softer texture than usual, such as cotton, wool, silk, and garments wrought from such kind of materials, lie there shut up a long time, the seeds of future havoc: the way I have on another occasion suggested, the plague to have spread itself at a great distance from Africa, where it first broke out (3). Others of them, on the contrary, communicate no noxious quality but

(1) Lib. 3. de aere, locis, et aquis, par. 1. in (2) in epidem. Hippocratis. (3) Discours de la peste, par. 1. de la peste, par. 1. de la peste, par. 1.

by contact. The former kind therefore may be transplanted by commerce, whereas the latter can only prove pernicious by actual intercourses and communication.

Of this last class is the *Lues Venerea*: which we are assured, from the most authentic memoirs, sprouted out originally in some of the *American* islands, particularly in *Hispaniola*: and towards the closing of the fifteenth century, by the means of naval commerce, was transported to *Spain*; from whence it made the best of its way into the kingdom of *Naples*, in the year MCCCCXCV, through the fatality of the war, which *Ferdinand* King of *Spain* waged at that time with the *French*; in the army of which monarch served several of the soldiery who had contracted this distemper in the fore-mentioned island: so that these, mixing with the prostitutes that were linked in common to the *French*, inasmuch as the same cities were taken and re-taken alternately by both parties, introduced this foul malady first into either army, then into *Italy*, and after that into almost all other parts of the globe.

I remember also, that I myself received it from the mouth of one of our own merchants, who had lived many years in *Muscovy*, that the *Venercal Lues* was scarce heard of in that country before the reign of the

late emperor, *Peter* the great. For the affairs of that people were generally managed by a mercantile method; and every thing carried on, with respect to foreign nations, without any great correspondence or alliance. But, on that prince's taking a resolution of travelling into other quarters of *Europe*, and making it a rule to detach a number of his subjects to the same parts of the world, in order to their being instructed in useful arts and sciences; these were not long in importing into their own country this punishment of immoderate venery: which was like to rage with so much the more severity there, as inflammations and ulcers receive a very slow cure in a climate subjected to any extraordinary degree of cold.

BUT to return to the *Small-Pox*. This disease then seems to me to be a real pestilence of its kind; which, owing its first existence to *Africa*, especially to that intolerably hot portion of it, *Ethiopia*, was from thence transferred to *Arabia* and *Egypt* (like that other depopulator, the great plague) in the manner as is above related.

Now, should any one think it very surprising, that this contagion should no earlier be stealing out of its native soil, and making irruptions into far disjointed places, let such a person reflect with himself, that, in the ancient

tient ages of the world; there was not sticking
 the commerce between nations, those espe-
 cially, that inhabited the more inland tracks
 of land, as is established in these our days;
 and that voyages to remote parts were not
 then, as now, in any sort of usage. Hence
 it was an observation of that excellent histo-
 rian, *Ludolfus*, that the *Ethiopians* were stran-
 gers to traffick (1). Therefore, as in process
 of time mankind became more connected
 and sociable, as well by the arts of war as of
 peace, this pestilential mischief diffused itself
 very widely. It acquired, in particular, con-
 siderable strength by the wars the *Christians*
 waged with the *Saracens* for the recovery of
 the *Holy Land*, towards the end of the ele-
 venth, and beginning of the twelfth century;
 the consequence of which was, that the
Europeans carried back with them this re-
 ward of their religious expeditions. From
 that time, in whatever communities this su-
 perlatively contagious malady has fixed its
 abode, it there still supports and maintains
 itself against all human efforts. For the ve-
 nomous matter, that is discharged from the
 pustules, being absorbed by the blankets and
 coverings of the sick, and there sticking fast
 and undetected, becomes the seeds of the
 distemper, just on the point of springing up
 in those, on whom its particles have any ways
 been scattered by contact; especially, if the
 season

(1) *Histor. Æthiop. lib. iv. cap. vii.*

season of the year and state of the circum-
 ambient air, lend an hand towards its pro-
 duction. I will not, I conceive, be foreign to my
 present purpose, to illustrate and confirm
 what I have been advancing by a particular
 Instance, which a very intelligent person,
 governor for a considerable while of Fort St.
George belonging to our *East-India* Com-
 pany, did me the favour to communicate to
 me. At that time then, said he, a certain
Dutch vessel touched accidentally at the *Cape*
 of *Good-Hope*, wherein some of the crew had
 in the voyage been ill of the *Small-Pox*:
 now the inhabitants of that spot, called *Hot-*
tentots, are actually so barbarian and stupid,
 that they seem to participate of a nature;
 which is but one remove from that of brute
 animals; with whom it is customary to per-
 form all servile offices for the sailors that ar-
 rive on that coast. On which account some
 of them, who were employed in washing
 linnen and other appurtenances infected with
 the morbidic sanies, contracted the distemper,
 which seized the poor wretches to such a
 degree, that the greatest part of them died.
 But after they had been taught by experience
 that this evil was propagated by contagion,
 they were not destitute of so much natural
 sagacity as was necessary for their defence.
 They made head therefore against this pesti-
 lential

lential malignity by fortifications, and lines of circumvallation, which those, who had not yet felt its fury, guarded with so much diligence, that whoever of the neighbourhood, where the distemper was now irresistibly raging, should attempt to pass them, was sure to meet his fate. This little story seems the more remarkable, as from hence it is evident, that a people, entirely rude and uncultivated, were obliged to recur to those expedients through necessity, which we formerly, guided purely by reason, been joined to be put in execution, in order to prevent the ravages of the plague (1); and which afterwards, when *France* some years since lay under that terrible calamity which threatened all *Europe*, were happily very effectual not only for restraining it within the limits of that kingdom, but also for extinguishing it to all intents and purposes.

CHAP. II.

Of the Nature and Kinds of the Small-Pox.

SINCE, from what has been already suggested, it is sufficiently manifest, that the *Small-Pox* belongs to that class of diseases which are termed pestilential; in order to form a clearer and more distinct idea of their

(1) *Discourse of the plague*, p. 11. c. 2. pag. 109.

their nature, I shall premise a word or two concerning the manner of pestilential agency.

ALL fevers whatever, if I am not out in my judgment, incident to the human body, may very aptly be divided into three kinds; the *simple*, for example, the *putrid*, and the *pestilential*.

Simple Fevers take their rise from a long-continued over-rapid motion of the blood, and its unequal mixture on that account, and an interrupted distribution of the humours into the respective parts of the body,

THE *putrid* sort are produced, when, during this state of things, a certain lentor arises in the minute and capillary canals of the blood; which, swept along by little and little by the force and impetuosity of the circulating mass, and translated into the veins, turns to corruption, and impregnates the juices with its malign qualities, that affect the bowels with their obstructing faculties no less than the superficies of the skin.

In the last place, I call those *pestilential* fevers, which participate of a certain heterogeneous poison. Of what nature soever that be, it vitiates and corrupts not only the blood, but principally the fine, subtle, nervous fluid, stiled the animal spirits. On this score these fevers

OF THE SMALL-POX

fevers are quicker, and much more violent in their action than the other kinds, and almost constantly draw after them most fatal consequences. However, it is a circumstance common to all fevers, for nature to struggle against what oppresses her, and to use her utmost endeavours to throw off any disorder.

Now, as the word *nature* is ever brought on the carpet by physicians in their cure of most of all diseases, I'll once for all avow my sentiments in that regard without reserve, and frankly in this place declare what that term, in my opinion at least, ought to import. It is an indisputable point, that there is a principle within us, endued with sensation, thought, and reason; the nature of which, notwithstanding, we cannot have a full and adequate idea of in this state of mortality. We will leave therefore the province of discussing this matter to those, who, at the same time that they are stupidly ignorant of what is discoverable by the senses, bend all their thoughts and application on tracing out those things, which are absolutely incomprehensible to human reason. But whatever property it be, it is allowed by all sound and orthodox philosophers to be somewhat distinct from matter. For how can matter, that is an unactive principle, and destitute of itself of even the least motion, be the spring and primary cause of thought, by far

far the most excellent of all motions? That this is then a sort of spirit, quite different from terrestrial matter, most intimately nevertheless united to our body, and that first puts the wheel of all our actions into motion, is sufficiently apparent.

AND indeed it seems probable to me, that this active principle is not of a homogeneous nature, but that the sovereign creator of the universe has implanted one kind of it in the human, another in the brute species; that of so divine an origine, as to be endued with life and sensation independently of the body; this of an inferior class, so as to become extinct when the body is no longer surviving. Some of the antients have distinguished the former by the term *animus*, the latter by that of *anima* (1): both which they were persuaded, (though, in my opinion, without sufficient foundation,) are congenial with us. For, as their *anima*, or soul, is all that is requisite for the life of brute animals; so our *animus*, or spiritual part, stands in no need of any corporeal adjunct. Now this affair, if I am not out in my conjecture, stands thus: The mechanism of our structure is such, that the mind

(1) *Juven. sat. xv. 148.*

Mundi

*Principio indulgit com-
munis conditor illis*

*Tantum animam, nobis
animum quoque.*

*Vide etiam Davisi not.
ad Cicer. Tusc. Disput.
lib. I. cap. 10.*

mind presiding over the body; on those organs labouring under any oppression, impetuously detaches what we call the animal spirits, those instruments of every kind of motion, in order to raise such perturbations in the blood and fluids, as may prove subservient to the procuring relief to the whole machine under those hazardous circumstances. Now this is transacted with so sudden an impulse, that the consequence seems to be an effect rather of a sort of instinct, than of any voluntary motion; whereas, notwithstanding, all this is effected in us through the influence the soul has over the body; in brutes, by the force itself and powers their souls are endued with. And, indeed, those very motions themselves, that are usually termed natural and vital, such as those of the heart, lungs, and intestines, which, through the whole course of our lives, whether we will or not, are ever subsisting; as they receive their origine from the mind, so are they under its perpetual regulation. This I could support by a multiplicity of arguments; but it no way squares with my present purpose or leisure. Besides, a most learned and most ingenious physician, Dr. Porterfield of Edinburgh, has rendered that attempt superfluous; as he has in a most elegant *dissertation* lately published, (1) set this matter in so clear a light,

(1) Vid. *Medical Essays* | *burgh*, vol. iii. *Essay* xii. et
says, published at Edin- | vol. iv. *Essay* xiv.

light, that there cannot possibly arise hereafter any doubt concerning it.

But to return from physics to the business of my profession. Our most sagacious *Sydenham* was such a stickler for this doctrine, that he made no difficulty to affirm, "That a disease was nothing else than an effort of nature, struggling with all her might to exterminate the morbid matter for the recovery of the sick (1)." To the same purpose *Hippocrates* utters himself after his laconic manner, where he says, that "Nature itself is the healer of diseases (2)." But this I have observed to be principally the case in pestilential fevers, where the morbid virulence is protruded to the superficies of the body in the form of pustules, carbuncles, and buboes; all which are nothing else but the venomous particles of the distemper, as the common experiment of communicating the *Small-Pox* to healthy subjects by inoculation plainly demonstrates. It is therefore an incontestable point, that the *Small-Pox* are a sort of poisonous fever, the several kinds of which I shall now enter on a description of, leaving the history of this disease to be recurred to in *Sydenham*, who first pointed out its different stages, and laid down rules for the management.

(1) *Observation. medic. circa morborum acutorum historiam, in princip.*

(2) *Natura quous in seip. Epidem. lib. vi. LIV.*

management and cure of the patient in each of them.

THE greatest part of writers divide the *Small-Pox* into the *distinct* and *confluent* sort, making an estimate of either according to the magnitude and number of the pustules, and the manner of their eruption. But they assign so great a difference between them, as to pronounce those to be scarce accompanied with the least danger, and the other kind to be ever attended with terrible consequences. And, indeed, this is most certain, that the *confluent* generally turn out much worse than the *distinct*, and that a greater number by far, sink under the load of those, than what miscarry thro' any fatal effect of these. Yet, thro' some extraordinary contingency, the *confluent* sometimes do not terminate so destructively, as the *distinct*. Nay, several symptoms, of an extremely dangerous tendency, occur in the *distinct* kind, which are not observable in the *confluent*, as shall be shewn immediately. For the havoc, to be dreaded from the *Small-Pox*, is not so much to be measured from the abundance of the purulent matter, as from other circumstances, whose causes we shall touch upon hereafter.

THE division therefore of the *Small-Pox*, into the *simple* and *malignant*, seems to me to

to be more consistent with reason, and better adapted to the nature of this distemper.

I term those *simple*, whose eruption is accompanied with a slight fever of no long continuance, which come to a head without any difficulty; are, after a few days, turned into pure pus, and at length scale off.

THE *malignant* are those, which are attended with a malignant fever on their first appearance; make but slow advances towards maturation, and will not suppurate; or should they arrive at suppuration, there being no remission of the feverish heat, are not without great trouble turned into scales.

THIS malignity, according to the different nature of the pustules, appears in such a variety of forms, that the marks with which it is stamp'd have produced to the *Small-Pox* a diversity of appellations; the principal differences of which, as far as ever came within the compass of my observation are the following. For the pustules, on their eruption, are either of a *crystalline* nature, a *verruccose*, or warty; or lastly, deeply *ting'd with blood*. I am not unconscious, that authors sometimes go farther in characterising these exanthematicus phenomena; while their supernumerary distinctions

distinctions arise only from a complication of some of these I have enumerated, or from the various degrees of them; an event frequent enough, when the disease is carried to an enormous height.

THOSE pustules I stile *crystalline*, which, instead of thick and concocted pus, contain nothing but a thin, pallid, and as it were transparent liquid. Which sort we occasionally meet with not only in the *confluent*, but even in the *distinct*, kind.

THOSE are called the *verrucoſe*, or warty *Small-Pox*, where no moisture is derived to the pustules; which, on the contrary, contract a hardness, and, very much resembling warts, sprout up and are prominent above the skin. These are peculiar to the *distinct* species.

NATURE is not uniform in protruding the *bloody* pustules. For I have been an eye-witness of their representing in the very first stage of the disease small tubercles, all turgid with gore blood; not unlike in colour to what shews itself on the skin, consequently to its being pinched by any kind of forceps. Now, these are in a little time succeeded by purple and livid Spots, here and there interspersed, that answer exactly the descriptions we meet with in physical treatises.

treatises on the plague. Tho' it is a more common accident for pustules, that came out in clusters, on the third and fourth day from their eruption, when they ought to ripen, to turn out livid and of a bloodish complexion, with a number of black spots all over the body; which in a day or two prognosticate approaching death. For these are real and genuine mortifications. It most frequently happens at this period of the distemper, that thin blood is discharged not only from the mouth, nostrils, and eyes; but flows thro' every out-let of the body, particularly the urinary passages, where sometimes it makes its exit the very first days of the illness. 'Tis ocularly demonstrative, that these are of the *confluent* kind.

The late eminent Dr. *Friend* (1) has made an addition of which he calls the *filiquose*, or poddy kind: where the pustules, destitute of all manner of moisture, exhibit an appearance of certain round, soft, and hollow bladders. Now these I look upon as a species of the *crystalline*, as they differ no otherwise from those, than that the protruded humidity partly transpires immediately thro' the cutaneous pores, and is partly absorbed by the lymphatic vessels.

'Tis ever a difficult task to trace out the real

(1) *Epist. de quibusdam variolarum generibus.*

real causes of things, and sometimes even a superfluous one. But in case we have a mind to set an enquiry on foot into the reasons of all these differences, the principal, as far as I can discover, are, almost an infinite diversity of *constitutions*; the *seasons of the year*, and their varieties; a multiplicity, lastly, of accidents after the body is infected, while the poison is lurking in the inner parts, nor has yet produced the distemper. For by inoculation we have learnt, that this malady does not shew itself by infallible signs, till the eighth or ninth day after the communication of the infection.

It may, perhaps, be thought surprising, that, in relating these causes, I have made no mention of the nature of pestilential seeds. Now, setting aside the impossibility of arriving at the knowledge of their nature, this does not seem to be much in question in respect of the production of the several kinds of this disease. For very often in the same family, where, during the ravages of this terrible disorder, there is a successive communication of the contagion, we observe a widely different event in regard of the respective sick.

As to *constitutions*, these are so predominant, that they descend to the next a-kin, as it were, by hereditary right: from whence

we find several diseases peculiar to certain families, to which they prove very destructive.

THAT the seasons of the year favour the production, one of one distemper, others of others, and that epidemical fevers take their rise from thence, and that those of the eruptive kind are particularly sensible of their variety, is confirmed to us by daily experience.

BUT what I have specified in the third article are out of number; namely, all the incidents from the first receiving the infection to the eruption of the spots. For the malignity of this venom does not by any means, during this interval, remain in a state of inactivity, but constantly and imperceptibly is exerting its strength, by varying first the animal Spirits, and after that the blood itself and juices. On which account should any changes, either thro' the exercises of the body, eating and drinking, or in fine, affections of the mind (all which are of very great consequence in these circumstances) be made in the humours under this fermentation, a different kind of pustules will easily be produced in the manner, perhaps, which I am going to speak of.

Now, the *simple Small-Pox* are suppurations

rations made, while the blood is not so vitiated, but that the fluids may in some measure be derived to the respective parts, without a total interruption of natural actions. The case is different in the *malignant* sort; inasmuch as there is, more or less, in proportion to the violence of the distemper, a general corruption of the fluids; and such a perturbation in the mixture of the blood, that no abscess, in regard of the purulent matter, can possibly be formed on the skin. When things are thus circumstanced, there is sometimes an oozing out of a thin liquid, which if it participate of a watry nature, begets the *crystalline*; if it be of a thicker and more glutinous consistence, the *warty* sort; but should it retire inwards, and, absorbed by the *lymphatics*, leave the bladders, it had raised, empty, the *siliquose*. Then, again, the blood, unable to perform the least vital function, is obstructed and stopt in its passages. On which occasion the skin is over-run with black spots, which are real gangrenes, and a discharge of blood issues by all the outlets of the body. Whence this species obtained the name of *sanguinea*, or the *bloody* kind. That these direful symptoms are the effects of an acrimonious poison is plain from hence, inasmuch as every one of them is subsequent to a bite of a certain serpent in *Africa*, called the *Hæmorrhoids*; as they are described by *Lucan*, a

poet inferior to no one in painting natural images. Thus he, B. ix. l. 806, as translated by Mr. Rowe.

*Deeply the fierce Hæmorrhoids impress
Her fatal teeth on Tullus' valiant breast.
The noble youth, with virtue's love inspir'd,
Her, in her Cato, follow'd and admir'd.
And as when mighty Rome's spectators meet
In the full theatre's capacious seat,
At once, by secret pipes and channels fed,
Rich tinctures gush from ev'ry antique head;
At once, ten thousand saffron currents flow,
And rain their odours on the crowd below :
So the warm blood at once from ev'ry part
Ran purple poison down, and drain'd the
fainting heart.
Blood falls for tears, and o'er his mournful
face
The ruddy drops their tainted passage trace :
Where-e'er the liquid juices find a way,
There streams of blood, there crimson rivers
stray ;
His mouth and gushing nostrils pour a flood,
And ev'n the pores ooze out the trickling blood ;
In the red deluge all the parts lie drown'd,
And the whole body seems one bleeding wound.*

BUT 'tis time to drop this terrifying subject, and to point out expedients for procuring relief in such calamitous exigencies,

CHAP. III.

Of the Cure of the SMALL-POX.

THAT all pestilential disorders essentially inflame the blood and humours in an eminent degree, is most evident. On which score they universally require evacuations and coolers. I shall treat first of the *simple Small-Pox*; after that, discuss every particular relating to the *malignant*.

BUT before we proceed any farther, we must enquire what rules are to be enjoined the sick, and what regimen in point of diet he ought to observe.

As to what regards the former of these articles; as the seasons of the year, so likewise must the strength and age of the patient be taken into an especial consideration. For one may with all imaginable safety do that in summer, which cannot be attempted without as much hazard in winter; and a person young, or robust, will go through without the least inconvenience what would soon demolish an infant or the delicacy of a female constitution. But this at least ought to be an universal maxim, that the sick should keep his bed the first

days of the distemper; and care taken by proper expedients as well to guard against the inclemency of winter, as, by admitting the refreshing air, to temper the sultry heats of summer. But to recur to cooling methods at a severe season of the year, and to incrust the body over as it were with isicles, is not the part of a prudent physician, but of a rash empiric, trying experiments at the fatal costs of wretched mortals. One ought therefore to tread in the middle way; and treat the patient in such a manner, as neither to smother him with heat or cloaths, nor obstruct by cold the passage of the matter to be thrown off by the pores of the skin: and principal care must be taken, to procure a plentiful supply of clear and coolish air; for that which is sultry will bring on a difficulty of breathing, check the secretion of the urine, and increase the number of the pustules about the præcordia and bowels: whence it becomes the source of inflammations, and, towards the end of the distemper, mortifications.

Our enquiry now will turn on aliments. These ought to be extremely light, diluting, and cooling; such as *barley-water*, or *water-gruel*. But as the food must be accommodated to the stages of the distemper, one must make choice of such a course of diet in the beginning, as is both laxative and diuretic.

retic. These advantages are conferred by drinks made of all preserved sweet fruits, and draughts of acidulated liquors: the best ingredients, in respect of the former, are *figs*, *raisins*, and *tamarinds*; and the latter intention is answered by small beer, with an *orange* or *lemon squeezed in it*; *pippin or wine whey*; *emulsions of barley-water and almonds*; *Moselle or Rhenish wine and water*; and whatever other liquids there are of this class.

THE *Arabian* physicians, if the intention of loosening the belly was not sufficiently answered by this management, had a custom of adding *manna*; tho' sparingly and with caution. For it is altogether necessary, says *Avicenna*, in the beginning to keep the body open (1). An instruction so sage, that nothing more conducive to the good of the patient, in the cure of this disease, can possibly be devised; if we only remember this at the same time, that a plentiful discharge ought always to be procured of the urine: for the skin wonderfully corresponds with the kidneys, by which means these latter drain from the body, without the least difficulty, whatever fluid is usually secreted through the glands of the former. Therefore, in order to prevent the inner parts from being over-loaded, it is a very rational practice to detach the morbid matter by these passages, as much as possibly we can.

BUT

(1) *De variolis et morbillis.*

BUT let us move on now to the medicinal province. And, indeed, in the first place it is necessary *to take away some blood*. Concerning which conduct, as it is often a matter of great controversy, I shall lay down a sett of precepts.

THAT opening a vein in a very tender age is indirect, is a point agreed on. But, as the blood in infants is generally more fizy, and often in greater quantity, in proportion to the bulk of the body, and, on the invasion of the disease, they are frequently seized with convulsions, there is an absolute necessity for making an evacuation; which may be done with sufficient safety, by the application of leeches to the temples, or behind the ears. And, indeed, in most of them blood may be drawn, if not from the arm, yet from either of the jugular veins at least, without any inconvenience.

THAT regard should be had to the strength of the patient, of whatever age, is evident to every one. But that is rarely so impaired, as to become incapable of supporting a competent loss of blood; unless perchance some extraordinary evacuations have preceded. Nor ought we, on this occasion, to rely too much on the pulse; for it often happens, that, from a thick, coagulated, blood, there is a more sparing secretion of animal spirits
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in the brain than usual; and the heart, thro' a diminution of its contractile powers, does not with its accustomed impulse drive on the vital fluid: in which case the strength, before oppressed, is observed to gain ground, on opening a vein.

IN what proportion to make this evacuation, may be very rationally determined by the violence of the distemper. Most of our physicians, if they direct blood to be taken away once, think they have done their duty; and abstain religiously from bleeding on the eruption, for fear of repelling the morbid matter. But these gentlemen, surely, are too scrupulously cautious. For both in young people, and in adults, we are frequently forced to recur to a second, or even third, bleeding; adjourning only the operation for two or three days. For in reality, venesection, where there is sufficient strength, is so far from retarding the eruption, that, on the contrary, it greatly promotes it; and for the same reason (as in the case of large abscesses, where there is an excessive turgency from the flux of humours, and a great oppression of nature from immoderate heat) by drawing away some blood, the suppuration is more happily performed, both in point of time, and the compleat protrusion of the morbid matter.

I HAVE often observed, when in the beginning of the illness, from the great number of little spots, we had all the reason in the world to be apprehensive it would turn out the worst sort, on repeated bleeding, the face of things to be so changed, that the spots appeared larger and fewer in number, (the force of the distemper giving way to the superior force of the remedy :) by which means nature was furnished with powers sufficient for the expulsion of the noxious humour. For this is to be laid down as an established maxim, that nature, ever desirous of a perfect tranquillity in the body, and holding a turbulent state of things in the utmost abhorrence, is labouring to get rid entirely of the poison ; that is, acts in such a manner, as to promote all possible tumefaction of the pustules. Nor, indeed, are the *confluent Small-Pox* worse than the *distinct*, on the score of being loaded with a greater abundance of morbid matter, but by reason this matter is not discharged in a proper manner. For, in casting up the account right, we generally find a greater quantity of humours to have flowed from the *distinct*.

To conclude, we reap this advantage from plentiful and repeated bleeding, that it prevents several very bad symptoms, frequent enough in this distemper ; such as a delirium, convulsions, difficulty of breathing, and the like.

like. Moreover, from dissecting dead bodies, we learn, that not only the exterior parts, but the interior also are seized with this pestilence. For I myself have been a spectator, when the lungs, brain, liver, and intestines, have been sprinkled all over with pustules. Nor, indeed, do I make the least doubt, but those sudden deaths, which sometimes, towards the end of this disease, when all apprehensions are over, invade the sick, are owing to a flux of the sanious matter to this or that more noble part, on a rupture of its containing vesicles. Wherefore, in no fever are the prognostics concerning life or death attended with greater uncertainty than in this we are now treating of. In a word, therefore, at all times of the distemper, in case a more than ordinarily-violent feverish disposition requires it, we must lessen the matter, where there seems to be a possibility for the body's bearing it. For it is ever expedient rather to try a doubtful remedy, than none.

A PHRENZY, supervening on the fourth day after the eruption, is justly accounted a very bad omen: so that the late Dr. *Freind* declared, that of all those, who had struggled with this dangerous symptom, he never saw one recover (1). But I can, nevertheless, most confidently affirm, that I have met with better success; who have restored numbers, seized

(1) *Epist. de quibusdam variolarum generibus.*

ed at that time with a delirium, by early bleeding, and a clyster.

AFTER a competent evacuation by venesection, it is very proper to purge the belly, which may be done with sufficient safety on any day before the eruption. But then the medicine, prescribed on this occasion, must be of a gentle nature; such as the *infusion of senna*, with the addition of a little *manna*; or, especially in children, *manna* alone. For no disturbance ought to be raised in the body. And in case any accidental phlegm, or bile, be lodged in the stomach, or that organ loaded through any late intemperance, before all other attempts we should administer a vomit.

WHEN it is once certain the patient labours under the *Small-Pox*, most physicians contend, that the eruption ought to be forwarded by all possible means. They must, nevertheless, remember, that this is nature's own work; and, consequently, that they should avoid bringing on, by any preposterous practice, a rapidity in the blood, or suffer it at this juncture to languish in its circulation.

It was a wise saying formerly of *Asclepiades*, that *he made the fever itself subservient*

vient to its cure (1). Meaning thereby, that the fever ought to be kept under in such a manner, as to be enabled to throw off what was injurious to the body, independently of any foreign assistance. It is necessary, therefore, jointly to restrain the inflammation of the blood, and assist the expulsion of the matter through the skin. For the promoting both these purposes, I have found of use the *bezoardic powder* and *nitre*; in the proportion of two parts of the former with one of the latter. Though sometimes these are mixed in equal quantities. An adult may take half a drachm of this powder three or four times a day; the dose being lessened for children, agreeably to their age. To this also, should the heat of the blood be increased to a violent degree, must be added *spirit of vitriol* dropped in a suitable quantity into the patient's usual drink. But should vomitings, or a nausea, be predominant, half an ounce of *juice of lemon*, mixed with a scruple of *salt of wormwood*, given in a draught, will allay these symptoms.

WHEN the disease is outrageous, one must cast about one's eye for medicaments of a composing, opiate, nature. But these are not to be prescribed in too great a hurry. For all anodynes, except in excessive pains, obstruct

(1) *Apud Celsum, lib. iii. cap. 3.*

obstruct in some measure the separation of the matter from the blood; and moreover, in case of a delirium from the force of the fever, render that generally worse. On which score, one cannot advantageously have recourse to them before a compleat eruption of the pustules: afterwards indeed opiates may safely be administered. The sick therefore, at this period, may very judiciously be enjoined to take every day towards evening either some *liquid laudamum*, or *syrup of poppies*; especially where there is youthful vigour in the case, or the patient be an adult: for a very tender age does not so well bear such a kind of treatment. Again, where an extravagant restlessness prevails, one or other of the recited medicines may be repeated early the next morning; inasmuch as the suppuration of the matter stagnating in the pustules is promoted by rest and sleep; but the sick is not to be indulged in the use of these, when, towards the end of the disease, he is either oppressed by laborious respiration, or in danger of being strangled from too great a viscosity of the phlegm. In the mean while, if the belly being costive, which generally happens, the fever should still subsist, a stool must be procured every other, or at least every third, day by a clyster.

'Tis need less to insinuate, that, if the precepts

cepts I have laid down are proper for the *distinct Small-Pox*, they will be found much more necessary in the *confluent*, where there ever subsists a greater degree of fear and danger.

FROM the *simple* therefore I will now, according to the order I have prescribed myself, advance to the *malignant*. These I distributed above into three classes; namely the *crystalline*, *verrucoſe*, or warty, and the *bloody Small-Pox*.

Now, in all the kinds of this distemper, the hopes of recovery are ever in proportion to the tendency of the pustules to suppuration: which making a slow progress, the morbid humour must be absolutely protruded to the skin at any rate. All the directions then, given in regard of the *simple* sort, must of course be put in practice in this situation. But all the kinds of the *malignant* demand a particular animadversion.

As it is impossible for the watery liquid in the *crystalline Small-Pox* ever to pass into concremented pus; we ought to have an eye to expelling it through those canals in the body, which are formed and fitted by nature for the conveyance of thin fluids. I said above, that there is a great correspondence between the skin and the kidneys. Wherefore while

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the most subtle part of the moisture is compelled to transpire through the cutaneous pores; that which is thicker must be expelled the body thro' the urinary passages by diuretics. As nothing of this tribe is more efficacious than *nitre*, it will be agreeable to good practice to exhibit this medicine, dissolved in some *small wine* (which alone the disease dispenses with) three or four times a day, in such a quantity, (that of a scruple, for example, or half a drachm) as will not prove any ways offensive to the stomach. Tho', towards the end, in order to support the strength, *canary* (which I find to have been a great favourite of our countryman, Sydenham) or any other generous and smooth wine may be allowed. But while *nitre* is taken in this manner, those medicaments must be flung in between, which are cordial in their nature, and may be assistant in forwarding the flux of matter to the pustules; such as *Raleigh's confection*; likewise the *bezoardic powder* with the addition sometimes of a few grains of *saffron*; and *spirit of hartshorn*. Altho' besides these, on the fifth or sixth day from the first appearance of the disorder, it will be requisite to apply *blisters* both between the shoulders, and the inner ankles; for answering which purpose *pultices of epispastic paste* are admirable; which, by their being soft, sink to the skin lying between the pustules, and there stick fast. For by thus drawing off
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that ferous liquid, the fever, which is apt to rage the more, when there is no farther drain and derivation of humours to the skin, is timely obviated.

I am not unaware, that most of our physicians, in all the *malignant* kinds of the *Small-Pox*, make use of this application earlier, and even in the first days of the disease. But there is absolutely all the reason in the world to fear, lest the blood, put into too great an agitation by the stimulating quality of the cantharides, should not so justly regulate the protrusion of the morbid fluid into the forming pustules.

THE *warty Small-pox* are more dangerous than the *crystalline*; inasmuch as the too viscid matter of the disease can neither be brought to suppurate, nor be carried off by diuretics. On which account, it behoves one to be very attentive to the fever, and to raise a sweat likewise, in order to digest the humours, by the cordial medicines, I have been just mentioning. *Epispastic pultices* must also be applied to the skin. The *Arabian* physicians affirmed this kind of the distemper to be ever mortal. (1)

LASTLY, those *Small-Pox*, which I above stiled *bloody*, require some particular

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remarks.

(1) Vid. 'Rhaz. lib. adjunctum, cap. viii.

remarks. In regard of these, if there be any room for medicine, we must arm our selves with such remedies, as by their styptic property bind the blood as it were, and restrain it in such a manner, that it has not power to burst the minutest artery. The most excellent of this kind are the *peruvian bark*, *alum*, and *oil of vitriol*. But the usage of these must be so ordered, that some of them do not interfere with the others. Therefore a drachm of the *bark* may be taken every six hours; and, at the expiration of three hours, as much *alum* as is not prejudicial. This will prove a most effectual medicine, in case it be so compounded, that three parts of *alum* be melted with one of that inspissated *juice*, which very ridiculously is called *dragon's blood*. The mass, when cold, must be reduced to a powder; a scruple of which, made into a bolus with *conserve of roses*, is sufficient for a dose. *Oil of vitriol* will very commodiously be given in the form which is kept in the shops, under the title of *tincture of roses*; five or six spoonfuls of which may be drank between whiles. Besides this, it ought to be continually dropped into the common drink; especially if livid, or black, spots appear interspersed with the pustules. Not only in the *bloody* sort, but even in the other kinds, where the skin is deformed, it will be of singular service. I will only add this, that

I have experienced the use of *blisters*, where a delirium calls for them, even in these circumstances, to be sufficiently safe. I have seen some escape the jaws of death by an application of this nature, who voided a great deal of bloody urine on the eruption. But every one of these patients, which is pretty remarkable, at the conclusion of the illness, paid a grievous price for his safety: for, either thro' boils arising in several parts of the body, or glandular tumours under the ears and arm-pits, which with much ado suppurated, they suffered excruciating pains. I remember also, that I once observed in a certain young man one of the tonsils all foul from a gangrenous ulcer, never curable without extreme difficulty. It is therefore evident, that it is the hardest task in nature to expel this poison from the fluids; and that the body is not re-instated in its former powers of agency independently of suppuration, either during the progress of the disease, or when it is now almost arrived at its final period.

IT is proper in all kinds of this distemper, towards the end, to wit, on the ninth or tenth day, to loosen the belly. By reason that a putrid fever, from the drying up of the pustules, or (if there be no suppuration) a subsiding of the swelling of the inflamed skin, generally comes on at this time, which

is not thrown off with more safety by any other remedy. But then we must make use only of the milder purgatives, such as I have advised to be prescribed before the eruption.

THIS whole affair I formerly explained and illustrated with several examples in an *epistle* to Dr. Friend (1), which he afterwards abundantly confirmed with the authorities of both antient and modern physicians; sufficient to force the assent of any one, who will not obstinately shut his eyes against the sun. All fevers have their course; and, when once the force of the poison has corrupted the humours, we cannot too precipitately get rid of the putrid matter that feeds the disease. And indeed we find by daily experience, that an omission of this nature is immediately succeeded by a hectic, accompanied with a purulent cough, a shortness of breath, and other indications of bad lungs.

BUT I must not forget in this place to hint, that, how useful soever opening the body may be at this time; yet, if either from a natural relaxation of the intestines, or from a frequent injecting of clysters during the course

Vid. *Friend. commentar.* | *epistolam, de purgantibus*
vii. ad *Hippocrat.* De | *in secunda variolarum fe-*
morbis popularibus. Et | *bre adhibendis.*

course of the disease, the belly be looser than ordinary, there will not be so great a necessity for a medicine of that kind, or at least it may be deferred for some days. For the strength of the patient is in the first place to be consulted, which a long illness, more or less, is apt to impair.

WE ought, moreover, to be very circumspect in regard to any purulent sanies, which may, perchance, be now lurking under the parched skin: for that is sometimes the case, and, on a rupture here and there of a small membrane, there bursts forth a most fetid pus. In these circumstances there is no room for purgatives, but the body is to be supported by suitable diet, till all the matter is discharged; a flux of which I have seen protracted beyond the twentieth day of the distemper, when the patient has notwithstanding recovered. I shall never forget the case of a certain most robust young gentleman, who was so terribly seized with the *confluent Small-Pox*, that, when the pustules ought to have come to a head, the whole face, turning black and dry, grew mortified, and covered with corruption; now, as from these appearances there were no hopes of his surviving, I made several incisions with a penknife till I came to the sound flesh, and ordered a fomentation from a *decoction of emollient and hot plants*, with the addition of some

campborated spirit of wine: which produced from the scarrified places a discharge of pus, which stunk to such a degree, that not one about him could bear to stay in the chamber; and, care being taken to digest the wounds by proper applications, and at last to purge the body, the poor creature escaped with life and safety; but not without bearing in his lacerated and deformed visage marks of the malignant virulence, to be carried with him to the grave, as so many monuments of the well-performed cure.

LASTLY, The *drawing away of blood* is serviceable at this juncture, in case there subsist an immoderate heat, and no objection lie in the way against recurring to this evacuation from want of strength to support it.

WHOEVER shall maturely weigh what I have thus advanced, will, not without reason, be astonished, that any physician, of *Boerhaave's* learning, could ever entertain the least idea of hoping, that some time or other *a specific antidote might be discovered against this contagious poison* (1); by which, for instance, it might be so entirely extinguished, that, altho' it had insinuated itself into the body, it should be unable, nevertheless, to produce any disease. The principles, however, and

(1) *Aphor. de cognoscendis et curandis morbis*, | 1390, 91, et 92.

and seeds of things are of such an absolute certainty, and established on so fixed a basis, as is an invariable law of nature; that a man, who should have a mind to change them, would act like those philosophers *by fire*, (as they call themselves) who, while they are employing all their faculties to turn baser metals into gold, though they fall short of their hopes, yet put off the fumes from their charcoal among the weak and credulous part of mankind.

I HAVE one thing more to add, which is, that no fever whatever calls more for a total extermination of its reliques, than this distemper. Therefore *blood*, in case of strength, the patient now recovered, *must be taken away*; and the body kept open by *purgatives*, repeated at suitable intervals. These things accomplished, the constitution is to be put on its former footing, by a course, before all things, of asses milk, and proper diet, and the benefit of country air in some agreeable recess.

By way of corollary to these long injunctions, I shall end with the history of an illness, which my son-in-law, (for whom I have a singular affection) the most learned and ingenious Dr. *Wilmot*, communicated to me; being the result of his attending on a young gentleman of fifteen years of age,
grievously

grievously afflicted with the *Small-Pox*, in conjunction with the also most learned *Dr. Mich. Connel.*

ON the first attack of the fever, a vein was opened in the arm, and a vomit given. The day before the eruption was prescribed a gentle *cathartic* potion. The spots, spread all over the body, were so small, that they looked more like the *Measles*, than the *Small-Pox*. The fever increasing, *Gascoign's powder*, with some *nitre* added to it, was exhibited every six hours; and *barley-water* drank, with *spirit of vitriol* dropped into it to a palatable acidity.

ON the fourth day of the eruption, the patient, being seized with a delirium, in order to bring on sleep, took six drachms of *syrup of poppies*; which, notwithstanding, was of no manner of efficacy.

ON the fifth day, there was not the least swelling of the face, being at the same time no remission of the delirium, with a very intense heat, and a proportionable quickness of pulse. Bleeding therefore was repeated, and the use of the afore-mentioned powder continued, with the addition now of five grains of *myrrh*. Nor was the *spirit of vitriol* omitted, together with the *barley-water*, nor the *anodyne draught*.

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ON the seventh day things remained exactly in the same state. But the breath grew short, and a dry, husky, cough was very troublesome. Hence to every draught was added some *diascordium*, and a spoonful of a solution of *gum ammoniac* occasionally taken; and the *paregoric* dose still exhibited.

ON the eighth arose a complaint of a most acute pain in the head, with an increased difficulty of breathing, a great urgency of the cough, a more languid pulse, without the least signs of suppuration: while the visage resembled parchment, no swelling succeeding either of hands or feet. Hence *blisters* were applied to the arms, and the inside of the legs, and the feet wrapped in plaster, half *cephalic*, and half *blister*. Draughts likewise, with half a drachm of *Mitbridate* and ten grains of *volatile salt of amber*, were taken every six hours. The throat was also gargled with *pectoral decoction*, with *oxymel of squills* in it.

ON the tenth day every thing grew remarkably worse and worse; for which reason, besides the continuation of the remedies enjoined, *blisters* were clapped to the inside of the arms.

ON the eleventh, the strength growing more and more impaired, to the *cordials* already

ready mentioned was added a mixture with the *Confectio Raleighana*, to be drank of frequently.

ON the twelfth, the pulse being now scarce perceptible, the breath drawn with great difficulty, and all hopes of surviving, seemingly, over, a great abundance of a limpid and most fetid humour all on a sudden burst from the almost choaked up jaws, not unlike that which is discharged by the glands of the mouth in a salivation. This flux continued twelve days without any diminution; at the expiration of which term, it began to lessen by degrees, nor till four days after stopped entirely.

ON the sixteenth day of the disease, the poor wretch, was become so weak, both by sickness, and that discharge, that he could hardly turn himself in his bed; though at the same time his mind bore up so effectually, that he refused no kind of diluting nourishment. Hence, he having acquired some return of strength, his fever seemed now to have degenerated into an hectic; on which score, after *losing* five ounces of blood, and taking draughts made up of *juice of lemon* and *salt of wormwood*, with the addition of a small portion of *sperma ceti*, he every morning drank asses milk.

By

By this method at long run, after *bleeding* twice or thrice, to the quantity of five ounces, and loosening the belly every now and then with a little *rhubarb*, and taking *elixir of vitriol* in some *Bristol-water*, the agreeableness of country amusements lending likewise a helping hand, his health was perfectly restored.

THERE cannot be produced a more illustrious instance of the solicitude, with which (as I have more than once insinuated) nature is ever actuated, and impelled, by whatever way she possibly can, to get rid of the invenomed matter of this disease.

CHAP. IV.

Of Accidents, attendant on the Small-Pox.

THERE are several accidents in the course of the *Small-Pox*, which, as they occur but seldom, nor seem to be essential to this disease, either put people in a fright, or make them have but an indifferent opinion of their physician. Therefore a few observations on this head may not be impertinent to my design.

SOMETIMES, just before the eruption, the patient is seized with convulsions. But that circum-

circumstance is attended with more terror than danger: and, in children especially, twitchings of the nerves, which are generally the forerunners of the distemper, are for the most part rather pregnant with hope, than fear. But, we must, on this occasion, which perhaps may seem surprising, be absolutely cautioned against *bleeding*, where *plasters* alone are to be applied: a *blister*, for instance, to the nape of the neck; and a mixture of half *blister* and half *cephalic plaster*, as it is called, to the soles of the feet: those medicaments, in the mean while being no ways omitted, which experience has demonstrated to be serviceable in these terrible shocks and concussions of the parts. Now, the foremost in this class are the *wild valerian root*, *castor*, and *chymical spirits and salts*. For it is found by frequent trials, that the taking away blood, in this situation, renders the distemper mortal. I cannot at present assign any other cause of this event, but that those involuntary motions spring from the weak condition of the sick; while an evacuation of that nature still assaults the little strength that is left so immoderately, that it has no share in pushing on the morbid matter to the skin. The case is different in adults; from whom, where there's strength, *blood must be drawn* in a small quantity, and the same remedies administered.

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THIS disease comes on sometimes in a different and almost contrary manner; the eruption being accompanied with no material fever, nor any great degree of pain; so that there is no apprehension of danger. But the hopes, conceived from thence, are generally frustrated. For when the pustules ought now to ripen, nature being sluggish and unable to perform her part, there is no such thing as suppuration. Hence arises an increase of the fever, which being attended with restlessness, anxiety, shortness of breath, and a delirium, dispatches the oppressed patient in a few days space. In such exigencies, a fever is rather to be encouraged, than suppressed. We must recur to the hotter kind of medicaments, which, by rendering the blood more rapid in its motion, and attenuating the humours, promote suppuration; such as the root of *Virginia snake-weed*, and of *contrayerva*, *saffron*, *asa fatida*, *myrrh*, and the like. But principally is *blister-plaster* to be universally applied. The expulsion of the humours by whatever means is always so agreeable to this distemper, that should the envenomed matter, as it is in more violent cases, be predominant, nature is ever endeavouring to get rid of it. Hence in adults comes on a salivation the first days of the eruption; while infants, who with difficulty void any thing that way, are not without the equivalent of

a looseness during almost the whole series of the disease. Either evacuation is here of great moment. On which account, as in regard of these the stools are not rashly to be stopped; so, in respect of the others, whenever the spitting begins to abate, we must keep it up by proper gargles, those particularly, where *mustard* and *pepper*, boiled in water, are the ingredients, with the addition of some *oxymel*. For it is a very bad prognostic in the *confluent* and *malignant Small-Pox*, that there should be any interruption to that watery discharge, during the whole process of the disease.

SOMETIMES a suppression of urine is painful to the patient, little or no advantages being derived from the most powerful diuretics. In that case, it was an injunction of *Sydenham's*, that the sick should be taken out of bed, and exposed to the cool air; which is generally attempted with success. But the most direct expedient is to infuse a clyster, especially if, on the appearance of the pustules, there arise any apprehensions from cold. We must likewise, in some measure, insist on *diuretics*; to the answering which purpose *Glauber's salt*, being both laxative and diuretic, is very conducive.

BUT, whenever a woman, in her pregnancy, is attacked by the *Small-Pox*, the physician

physician ought to be terribly frightened. For he has all the reason in the world to apprehend an abortion, the source, often of a complicated danger : on the one hand, of a fresh fever, which then comes on ; on the other, of a very debilitating flooding. Wherefore the farther the pregnancy is advanced, the more threatening is the hazard : inasmuch as a maturer birth makes its exit with a greater loss of the vital fluid. I can, nevertheless, of my own knowledge attest, that a patient labouring under this distemper was brought to bed at the full time, both the mother and child surviving, thro' an event not more extraordinary, than happy. Tho' it is material, at what period of the malady an abortion should happen ; as a diminution of the strength from that incident is so much the more dangerous, the nearer approaches the pustules have made to their maturation. Therefore, on any preternatural discharge, the same remedies are to be made use of, which I specified in the *bloody Small-Pox*.

But as there is a great variety of accidents of this nature, and some of these have become the subject-matter of debate among our physicians, I shall be very particular in discussing some points relating to them.

WHEN a woman, therefore, happens to
E prove

prove abortive, the fetus generally appears full of the maternal infection; tho' this is not an invariable rule. The cause of this diversity will be very obvious to any one, who shall duly weigh what I have already said concerning contagion (1); and shall compare those insinuations with what I shall hereafter deliver, when I come to speak of *inoculation* (2). For I shall there make it evident, that the morbidic force is a subtil matter, exhaled from the pustules under their state of maturation: which, being admitted into a sound body, does not produce any effect, till after the eighth or ninth day. For which reason, when the fetus comes into the world, before the pustules in the mother are arrived at their height, it brings with it no foul marks of the distemper. From whence it now and then falls out, that on the second, third, or any other day before the eighth from the delivery, the *Small-Pox*, contracted from the mother, breaks out in the infant, whether born before its time or not; an instance whereof, which I myself lately beheld, I will here produce.

A certain lady of quality, in the seventh month of her pregnancy, was seized with the *confluent Small-Pox*, of so malignant a nature, that there was not the least appearance of any one good sign. For neither

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(1) Cap. i.

(2) Cap. v.

came on a salivation, nor a swelling of the hands and feet, on the subsiding of the face; nor, lastly, was there any relief derived towards the end of the distemper from a flux of urine: but, on the contrary, the visage was spread all over with small pustules, that could scarce be said to suppurate. On the eleventh day, therefore, having miscarried of a son that bore not in its body a single mark of the disease, on the fourteenth she departed this life. But the child, now four days old, being taken in the morning with convulsions, the forerunners of the illness, in the evening, the *Small-Pox* being all out, gave up the ghost. It is plain here, that, on the pustules coming to a little suppuration, as is usual, on the eleventh day, the disease of the mother passed into the fœtus, about to act the tragedy over again, at the expiration of eight days, in the tender body of the infant.

BUT, where there is no abortion in the case, the offspring all its life-time is free from this malady; unless by chance it comes into the world, before the pustules are arrived at maturity. For, as some principle congenial with us renders the body obnoxious to the receiving this contagion; so, having satisfied as it were this debt of nature, we are in a state of safety all our days after. But that the fœtus, nevertheless, is sometimes

seized independently of the mother's being any ways affected, I am going to evince by a signal example. I remember a certain woman, who had a good while before been visited by this distemper, towards the end of her pregnancy constantly sitting by her husband, then labouring under the same illness, having gone her full time to have been brought to bed, nor did she indeed contract the least speck from the *Small-Pox*; but the strange deformity of the dead fœtus, from pustules all over its body, was a demonstration, that the variolous malignity had proved fatal to it before it was launched into the realms of light. No one, therefore, ought to entertain the least suspicion, that any mortal living can be subjected to the undergoing the danger of this disease twice. But from what efficient cause proceeds the impossibility of being attacked more than once by this pestilence, I am much about as wise in clearing up, as the most ignorant. Nevertheless, I will over and above add this, that an infant sometimes, even in the womb, extricates itself with safety from this malady, all tokens of the disease entirely vanishing before delivery (1).

FROM what I have said on this head of abortions, may be gathered the judgment
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(1) Vid. *Mauriceau,] chement des femmes, Obs.*
sur la grossesse et l'accou- 576.

we ought to form to ourselves from the flowing of the menses, during the invasion of the *Small-Pox*; a circumstance, productive frequently of no little apprehension. For this discharge is of the same kind as the flooding from the womb, subsequently to an abortion: and should it be extraordinary, either according to its natural course, or through a preternatural fermentation of the blood, under both these suppositions it is of service rather, than attended with any danger. But, in either case, if the evacuation is so immoderate, as to threaten the impairing of the strength to a great degree; it must be checked by an exhibition of those medicines, which are above appropriated to the *bloody Small-Pox*: a vein being by all means *opened* at the same time, if the situation of affairs should render that operation necessary. Sometimes, notwithstanding, we find by experience an uterine discharge of blood to subsist from the beginning to the end of the distemper, without any loss of strength, or inconvenience to the sick.

THE same sentiments may be entertained in regard of those profuse bleedings at the nose, that are frequent enough on the first seizure of this disease. For they are owing to the effervescence of the blood in the minuter vessels; and on that score, by diminishing the heat, they are for the most

part rather of advantage, than prejudicial, unless they should continue in too great an abundance.

It sometimes happens, tho' not so often, that an intermittent fever, a single or double tertian, accompanies the fever attendant on the *Small-Pox*. Whenever this is the affair, it will be proper to give the *bark*, or the *extract* of it, which is generally more commodious, at due intervals, till there shall be no farther returns of the paroxysms. Nor, in reality, are there the least grounds, on this occasion, for fearing any obstruction, that can arise from this drug, to the maturation of the pustules: but on the contrary, as this additional fermentation of the blood, and perturbation of the humours may easily put a stop to suppuration, by suppressing of these, all things go on happily and uninterruptedly. Though in the first place the belly ought to be loosened by a *Clyster*. For this happens in like manner, as that febrifuge is found to be very efficacious in mortifications (1); which being ever accompanied with a fever, I above, in the *bloody Small-Pox*, where there is an appearance of black spots, or in other words, little gangrenes, interspersed, directed the same medicine (2).

IT

(1) Vid. *Medical Essays* | i. artic. 10.
says, *Edinb. vol. v. par.* | (2) *Cap. iii.*

It will not be amiss in this place to lay down one general and universal rule; namely, that whatever acute disease be complicated with the *Small-Pox*, the remedies peculiar to that disease must ever be administered: which, indeed, are for the most part taken without much inconvenience.

BUT these points, if I mistake not, are placed in a sufficient light. To conclude, therefore, it does not seem unworthy of intimation, that this disease, in case it accidentally invades any one after some extraordinary, either natural or procured, evacuation, turns out generally very mild. A woman in child-bed, so she be only a little recruited in strength, is ever susceptible of a lighter kind of *Small-Pox*, and derives an advantage from her late pains. Which may moreover be asserted of persons lately recovered from any acute distemper. I saw several formerly in the hospital, who being infected with the venereal disease were under a necessity of being salivated, escape to a man with all the ease in nature from this pestilential malady, which they caught, when their bodies were now quite exhausted, and they in a manner reduced to perfect skeletons. A sufficiently evident indication certainly, that any lessening the matter whatever, by subtracting the fuel from the fire, is exceedingly agreeable to this distemper.

IN the last place, it will not be deviating from the purpose in hand, to make an addition of one article more to those we have thus far been descanting on. Though this be a terrible disease, it becomes notwithstanding, on occasions, the source of some emolument: inasmuch as in bodies, where the blood, whether from constitution, or way of living, has contracted any vitious quality, and too great a viscosity of the lymph brought on glandular tumours, a purifying of the humours by the *Small-Pox* has frequently established a greater degree of health.

CHAP. V.

Of Inoculating the Small-Pox.

THE custom of ingrafting, or transferring from an infected body into a sound one, the *Small-Pox* has now prevailed among us for several years. This business drew our physicians into parties, some approving, others condemning, the new practice. On which account, I shall think it no trouble in this place to interpose my sentiments concerning it.

THE essentials of our life and nature are such, that we are very prone to embrace
whatever

whatever precautions may seem conducive to our guarding against hurtful contingencies. But if an evil is to be borne but once, we not only without reluctance, but even with intrepidity submit ourselves to the discipline; namely, for this reason, that the rest of our lives may be exempted from that solicitude. Therefore, after it was evident by experience, that there was no possibility of the return of the *Small-Pox*, and that scarce one in a thousand escaped the infection through the whole course of life; it began to be canvassed, by what method this disease might be transplanted: which being demonstratively contagious, that the seeds of that contagion lurked in the pustules, it was very natural to imagine.

But what particularly surprizes me is, that a people, almost ignorant of physical matters, should take scent after any thing of this kind. For this invention, as far as ever I could trace it, flowed originally from the *Circassians*; whose women are said to be remarkably fair and beautiful: so that it was customary for traders that way to make money of young girls, especially the poorer sort, by selling them for slaves in the neighbouring provinces. And as they observed, that the danger arising from this disease, as well in respect of features, as of life, was in proportion to the years of those who were seized with

with it; this method of inoculating children very young was thought of, in order to bring their goods, rendered thereby more saleable, to a better market. Nor indeed did that affair stand in any great need of assistance either from a physician, or surgeon. For it was sufficient slightly to wound the skin in any part of the body, and insert a little pus procured from ripe pustules; a task, the very women had learnt from use and custom to put in execution (:). As even at this day our own operators, having made a light incision in both arms, and applied a small pledget of lint or cotton, dipt in variolous pus, to the wounds, scarce ever frustrate the hopes of their future patients. But, not a great many years ago, this art began to be exercised at *Constantinople* and *Smyrna*, not indeed by the *Turks*, who, from a persuasion that all events in this life are governed by an unavoidable fate, look upon it as execrable to resist, or offer to obstruct its decrees; but by the *Greeks*, *Armenians*, and others residing in those cities, who communicated the practice to our people (2).

BUT

(1) Vid. *Philosophical Transact.* No. 339 et 347.

(2) *Maitland's Account of inoculating the Small-Pox*, Lond. 1722. Et

Dissertationem medicam de Byzantina variolarum insitione, auctore Le Duc, Lugd. Bat. 1722.

BUT, to omit nothing relating to this affair ; we are told by a person of erudition (1), that the practice of *sowing*, as it is called, this distemper has been known to the *Chinese* above these hundred years, who perform the operation differently. For they keep by them some vesicles of the dry pustules, just scaled off, in an earthen jar, close waxed down. When, therefore, they have a mind to give any one the *Small-Pox*, they take three or four of these scales, putting the weight of a grain of musk amongst them, and forming them, with the help of a little muslin into a tent, they thrust them up the nostrils. It was no hard matter for persons of their sagacity, seeing those, who were conversant with the sick, contract the same disorder, to imagine the air to be polluted by foul exhalations issuing from an infected body, which being sucked in by a sound one, communicated the contagion ; and from thence rationally conclude, that this pestilential matter might even be imbibed by the nostrils. Nor, indeed, were they out in their conjecture.

IT is certain, nevertheless, (whatever the author of this narration, more a divine than a physician, says to the contrary) that this *Chinese* way of transplanting the disease is attempted

(1) Vid. *Lettres edifiantes et curieuses des missionnaires*, xx. recueil, pag. 304.

attempted with much greater danger, than the *Greek*. For the morbid particles, thus sucked up by the nostrils, are exceedingly injurious to the brain, by reason of its vicinity with the olfactive nerves. Besides, that the infection is not propagated by the blood, but the nervous fluid, I have shewed on another occasion (1).

BUT the difference, we are now talking of, I myself formerly discovered by experience. For when in the year MDCCXXI, at the command of his late most gracious Majesty, as well for the sake of his own family, as of his kingdoms in general, an experiment was to be made on seven condemned criminals, whether inoculation might be practised with sufficient safety; I easily obtained leave for attempting to communicate the disease, in one subject at least, after the manner of the *Chinese*. One of the number, selected for this purpose, was a girl of about eighteen years of age; in whom a pledget, moistened with some ripe pustulous matter, having by my order been thrust up her nose, the event really answered. For she sickened and recovered like the rest, who contracted the contagion by an incision made in the skin. The symptoms, notwithstanding, were very grievous; as, immediately after receiving the poison in her nostrils, she was sadly tormented

(1) *Introduction to the mechanical account of poisons.*

ted with most acute pains of the head, together with a fever, that continued without the least intermission till the eruption of the pustules.

FROM that time, therefore, this expedient was laid hold of without any great fear, and even sometimes, as it is usual in regard of new experiments, with sufficient temerity; through a persuasion that the *Small-Pox* produced this way would prove of a milder sort, than those that invade mankind in the common course of nature. For from the calculations of those, who have applied themselves to this affair, it is manifest enough, that hardly one in an hundred dies through inoculation; whereas this disease destroys by far a greater number, in proportion, when propagated naturally (1).

WHEREFORE, with what security the translation of this distemper may be attempted, will be confirmed by the following narrative, which I received from a person of great veracity; one who employs several slaves at *St. Christopher's* in the sugar trade, the merchandize of that *American* island. This gentleman, then, at a time, when the
Small-Pox

(1) Vid. Dr. Jurin's letter to Dr. Cotesworth, containing a comparison between the mortality of the natural *Small-pox*, and that

by inoculation. Et ejusdem account of the success of inoculation in the years 1724, 25, and 26.

Small-Pox raged there, and in the neighbouring islands, with greater violence than ordinary, ingrafted the infection himself with his own hands on thirty of them of every age, from fifteen to thirty; and that with such particular success, that though the greatest part of them were *Ethiopians*, not one of the whole number miscarried. For altho' all *American* people seized with this pestilence ever labour under it to a violent degree, yet we are taught by experience, that it proves generally more destructive to those born in *Africa*.

MATTERS being thus circumstanced, we will now look into the validity of the objections against the practice. And indeed in the first place there are some, who contend, that the spots, arising from inoculation, are not the genuine disease; and, consequently, that this experiment is no security in nature against receiving any future infection. Nay, moreover, they take great pains to produce several as evidences, who though they had gone through this process of ingraftment, were nevertheless seized afterwards with the true *Small-Pox*. But how it is possible for the contagion, that is to say, the very seeds of the *Small-Pox*, to generate, not a distemper of its own, but another of a different kind, I do not cleverly understand. Nor is it, in fact, of any
signification,

signification, what way one receives the infection, so it only produces evident marks of the disease. As to those, who, having had the artificial *Small-Pox*, are said notwithstanding to have caught them afresh in the natural way; I, upon my word, though I have employed some pains in the matter, could never yet light on so much as a single instance, that proved any way satisfactory to me in that regard. I know, in the mean while, there has been a little ridiculous story propagated abroad, principally by a certain very modern author, concerning a child's contracting the *Small-Pox* afresh, who about three years before had undergone the illness by inoculation. But I am satisfied, at the same time, that the credit given to this report stands on a very precarious foundation; and that some of the family affirmed, that the *Small-Pox*, subsequently to that operation, never appeared: the parents, all the time deceiving themselves, (as we easily give into a belief of what flatters our inclinations) while those about them were unwilling to rob them of this pleasurable mistake. To speak, therefore, to the purpose; If this has been really once matter of fact, why do not we perceive it to happen more frequently? Or, of what weight ought to be a single example, though certain and uncontroverted, since in almost an infinite number of other experiments of that kind,
nothing

nothing like this case has ever yet been actually found to be the consequence? But some folks are possessed by an incurable itch of scribbling, and a boundless spirit of contradicting those they envy. Let us then indulge them so far, as to allow them to enjoy their *vanities*, their little, low, empty vanity.

BUT they go on with their frightful stories, insinuating the danger there is of transplanting into a sound body, along with the *Small-Pox*, any other contagious malady, which the sick may perhaps have had lodged in his blood and humours; inasmuch as all contagion is of a very subtle and a wonderfully active nature. And indeed it seems very probable, that other diseases, besides cutaneous ones, may be communicated by the skin; such as, perchance, are the king's evil and venereal lues. Yet I can scarce believe it possible, for the seeds of one distemper to carry along with them a mixture of the productive matter of another, of a quite different nature. However, be this as it will, there is no physician in his senses, but who would make some choice, and not pick up his matter for inoculation indifferently from any subject, sound otherwise or unsound, that should occur to him. Admirably well adapted to this use are the *Small-Pox* of infants or children, in other respects

respects sound, and born of parents as sound as possible. Besides, in my opinion, it is of more weighty consequence, into what sort of body the pestilential poison be infused, than from what kind of one it is extracted. Which hint I therefore give, because I have more than once observed some rash and unguarded surgeons to have inoculated a mortal *Small-Pox* on weak and ill-habited bodies. In the last place, it is far of the greatest moment, for the physician to take care, that no new contagion be introduced into a body, which a previous contagion had invaded. For I have known such practice end in a dismal event; inasmuch as nature was oppressed and forced to sink under a complicated load, which, perhaps, had there been only one disease for her to have struggled with, might have come off victorious.

BUT I will now briefly subjoin what I look upon to be the principal reasons, why the ingrafted is safer than the natural disease. In the first place, the poison is communicated to the body of a child, or at least to one young, and, proportionably to the age, strong and robust. In the next, by *drawing away*, where there is a necessity for it, some *blood*, and gently purging the humours, we obviate the violence of the approaching fever. Lastly, during all the

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time

time the lurking venom is exerting its strength, (which is generally eight or nine days) the body is kept quiet, and temperance preserved, both in regard of diet, and every thing else; whereas numbers, from an over-heating of the blood by wine or violent exercises, fall on a sudden into fevers, whence all the symptoms must necessarily be aggravated. Some too have imagined, that the discharge at the orifice of the scarrification made for inserting the pus, as likewise that which flows from the pustules broke out all round about it, contribute something towards the security of the patient. But the small quantity, thrown off this way, is not, seemingly, of any service. Of much more benefit will be a couple of *blisters* applied, one to one of the arms, the other to either of the legs; care being taken in the mean while to promote the digestion of the purulent matter in the ulcers through the intire course of the disease. Which method, I think, will unquestionably be useful on this occasion.

I MUST also hint, that this disease, implanted by inoculation, is generally so mild, that it hardly calls for help from any physician. But should it fall out otherwise, as it sometimes does, the same methods of cure, which I above pointed out in regard of e-
very

very kind of the *Small-Pox*, will be found necessary.

NOR must I, in the last place, forget to mention, that symptomatical boils and tumours, under the ears and arm-pits, are oftener apt to arise in the artificial, than in the natural, distemper; for this reason, as I imagine, because in the former case the venomous matter is not expelled the body with so great a force, as in the latter; which puts nature on remedying that inconveniency by the expedient assigned. For which reason, we must use our utmost endeavours to bring them, of what condition soever, to suppuration: but if this be impracticable, they must be lanced. And, when all the pus is discharged, the body must be purged with proper medicaments, and those exhibited more frequently, than is customary in the natural disease.

CHAP. VI.

Of the MEASLES.

THE *Measles* have a great affinity with the *Small-Pox*, as they are derived from the same origine, have sprung up in the same countries, and been propagated in the same manner, namely by contagion, into

distant climates; and never seize any one more than once.

THE history of this disease, according to the progress it generally makes with us, is most accurately (as, indeed, is every one he treats of) described by Sydenham; who affirms, *it is a fever, which, both in its nature, and the method of its cure, is sufficiently connected with the Small-Pox*; that is to say, is attended with a very great inflammation, and a protrusion of pustules, peculiar to itself, through the skin; which inflammation not only lays hold of the exterior, but the interior, parts also of the body, particularly the lungs, the consequence of which is a cough, and shortness of breath. Now, though this disorder is not so dangerous as the *Small-Pox*, and of a shorter duration, being terminated commonly in six or seven days, or at farthest on the eighth, when a scurf, like bran, scales off from the body; yet its attacks are accompanied with a greater degree of anxiety, and more intense heat, than are produced by that distemper. On which account, it was observed formerly by *Rhazes*, that the body was more inflamed, restless, and under a heavier oppression of the animal spirits in the *Measles*, than in the *Small-Pox* (1).

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FROM whence I am often apt to wonder, that a physician, superlatively sagacious and experienced, whom I have frequently mentioned with esteem, should never have prescribed bleeding on the very first assault of this disease; but, on the contrary, to have postponed this remedy so unaccountably, as never to enjoin it, but when, towards the final period of the illness, a preposterous regimen, and a course of too hot medicines, had brought on a laborious respiration, and a cough. Who, nevertheless, himself observed, that a diarrhæa, often subsequent to this fever, which, in his opinion, *owes its origine to exhalations of the inflamed blood poured on the intestines*, only finds relief by *venæsection* (2). But that otherwise great man seems very excusable; inasmuch as in those times it was looked upon as a sort of sacrilege to bleed in fevers, attended with any eruption, in children especially, who were the principal objects of this kind of sickness; through a fear, that this evacuation would obstruct the future eruption. Though it is evident from the consequences, that those apprehensions were entirely groundless.

WHEREFORE, to come to the curative part, as this pestilential disorder borders on

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(2) *De morbill. cap. v. pag. 207.*

the *Small-Pox*, it does not demand a very different treatment from that laid down in their regard. We must *bleed*, therefore, on the first symptoms of this illness, in proportion to the age and strength; and that, if possible, before any eruption: though, in case the pustules appear, we must still *bleed*. For there is all the danger in the world to be apprehended from an inflammation of the lungs, which we ought, as expeditiously as we can, to put a stop to. For which reason, on an increase of the fever, though bleeding was enjoined at the beginning of the distemper, it is necessary to repeat it. Lastly, when the disease is going off, and there is no farther protrusion of matter to the skin, this evacuation must by no means be omitted; in order to prevent a flux of humours from falling on the breast, or intestines, and the patient from becoming hectic and consumptive.

'Tis, really, to be lamented, that physicians have not ever, in so great a cutaneous inflammation, directed bleeding. And, above all, I admire that Dr. *Morton* (3), a man fond of taking away blood in the subsequent stages of the disease, should, notwithstanding, have the utmost aversion to such a practice in the beginning of the illness. But what put this physician on run-

(3) *Puretolog. par. altera*³ cap. iv.

ning counter, was a notion, he had rashly conceived, and never rightly understood, concerning a malignity, and venom infused into the animal spirits : which made him in a hurry, by the worst of precedents, to detach into the body his hot medicines, under the name of cordials, as so many auxiliary forces, forsooth, against the enemy ! Of such consequence it is, that whoever has an eye to the arriving at the art of healing, should first be well acquainted with mechanical principles.

THE diet ought to be of the same kind, as that enjoined in the *Small-Pox* ; so that the belly be kept rather loose, than bound, during the whole period of the sickness.

As to what regards remedies, to those that cool the blood, such as were prescribed in the other disease, must be added medicines in order to ease the cough, and promote expectoration ; namely, *oily linctus's*, and *pectoral decoction*, which with the addition of a little *nitre*, is to be frequently drank from the beginning to the end of the disorder. Sydenham was accustomed, even on the first days of the malady, to order a doze of *syrup of poppies*, to procure rest, though, in my opinion, without sufficient precaution : as all drugs, or preparations, of an opiate nature thicken the humours, render the

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breath

breath shorter, and obstruct the eruption of the pustules. For which reason, while the disease is advancing to its height, they are to be used very sparingly; tho', on its declension, their exhibition is altogether proper and judicious. For when from an acrimonious phlegm infesting the lungs, a cough threatens an hectic and consumption, we must recur to anodynes to allay the irritation. But then we ought to throw in between whiles some little gentle cathartics. *Milk* too should be drank, especially *asses-milk*. Change of air is likewise extremely necessary. Lastly, as far as the patient's weak condition will allow of it, the body is to be put in motion by daily exercise.

THOUGH I really fear, it may look like hunting after fame to recite the following narration; yet, as it makes to the purpose, and is a confirmation of what I have been delivering, I shall beg to be indulged so far. About forty years ago were very rife in this metropolis a more than ordinarily pestilential sort of *Measles*, which made more havock than the *Small-Pox* themselves. A certain very eminent physician came to me at that time, asking the favour of me to communicate to him my method of treating this distemper. On this, I enquired, if he had ever ordered any blood to be taken away? He answered, no; for that was very rarely *Sydenham*

Sam's practice, Whereupon, I advised him always in the beginning, or in case he was sent for later, as early at least as he could, to have a vein opened. For, says I, this disease brings along with it a peripneumony, which he himself knew there was no other way of obviating. Some little time after he paid me a visit, to return me thanks for my council; and declared, that all those he had managed in this manner recovered to a single individual. Bleeding from that time has acquired such an established reputation, that even our apothecaries at this day are well acquainted with the practice.

LASTLY, I shall add one remark more: as I observed in respect of the *Small-Pox*, that those raged more or less, just as the season of the year and quality of the atmosphere corresponded with the morbid contagion (1); so have I experienced the same to be the case in regard of the *Measles*. Dr. *Morton* also tells us (2), that in the year 1672 this disease was so epidemical, that no less than three hundred constantly crowded at that time the weekly bills of mortality.

BUT, I have at length put the finishing stroke to this small work, such as it is; which, whatever handle it may possibly afford to contentious and malevolent men for cavilling

(1) *Cap. ii.* (2) *Append. ad puretolog. Pag. 427.*

cavilling and finding fault; will nevertheless, I hope, turn out of use and advantage to the public: the most desirable thing in the world. For a consciousness of well-intended endeavours, and of integrity, is preferable to any panegyric in nature; which is ever the enjoyment of him, who gives proof of having the general good at heart, and looks upon himself as sent into the world, not to pursue merely his own interests, but to be universally benevolent to all mankind: according to that of the poet;

Nec sibi, sed toti genitum se credere mundo (1).

(1) *Lucan. Lib. ii. v. 383.*

The E N D.

R H A Z E S's
COMMENTARY

Concerning the

SMALL-POX *and* MEASLES.

Translated into *Latin* from the Original
Arabic, and now rendered into *English*.

R H N E 22

COMMENTARY

SMALL POX AND MEASLES

Translated into Latin from the Original
French, and now revised into English

In the Name of GOD merciful, gracious,

A

DISCOURSE

ON THE

Small-Pox and Measles,



The PREFACE.

Says *Abu-Beker Mohammed* the Son of
Zachary :

ONE night, as I was sitting with a certain noble, exceedingly good, and excellent man, highly studious of expounding useful sciences, so as to render them plainer to mankind, and easier to be understood, we incidentally started the subject of the *Small-Pox*. I there, that night, uttered without reserve all that came into my mind concerning that matter.

WHICH having heard, this personage,
whom God for the good of mortals long
safe

safe and sound preserve! had a mind, that I should compose a treatise on that disease, worked up with that coherence and fitness of its parts, as should be solid and masterly: inasmuch as no tract had yet appeared, penned by any one either of the ancients or moderns, sufficiently correct, and plainly satisfactory.

ON which occasion I compiled this discourse, in hopes of recompence from God powerful, glorious, and the effect of his benevolence.

Now this is the sum of its contents, and the index of the chapters.

CHAPTER I. *Of the causes of the Small-Pox: also, whence it comes to pass, that not a mortal, except here and there one by chance, escapes untouched, and free from them.*

CHAP. II. *Of Bodies, which are fit and disposed for the Small-Pox: also of the seasons of the year, in which the Small-Pox are wont to happen more frequently.*

CHAP. III. *Of the prognostic signs of the eruption of the Small-Pox and Measles.*

CHAP. IV. *Of the articles of the regimen, or cure of the Small-Pox, in general.*

CHAP. V. *Of preservation from the Small-Pox before the signs of them appear; and of*

of the manner of hindering the multiplying of them, after the signs of them have appeared.

CHAPTER VI. *Of those things which hasten the coming out of the Small-Pox, and their protrusion: also, how in regard of these nature is to be assisted.*

CHAP. VII. *About the eyes and throat, and ears, and joints; and what is necessary to be provided, immediately after the signs of the Small-Pox have appeared.*

CHAP. VIII. *How the Small-Pox are to be brought to maturity.*

CHAP. IX. *Of the drying up of the Small-Pox.*

CHAP. X. *How to remove, or take off the dry scales of the Small-Pox, and eschars from the eye, and the rest of the body.*

CHAP. XI. *How to efface and take away the pits of the Small-Pox.*

CHAP. XII. *Of the regimen in respect of aliment, or the diet of one, labouring with the Small-Pox.*

CHAP. XIII. *Of the regimen of nature, or the belly of one, labouring with the Small-Pox.*

CHAP. XIV. *Of the Small-Pox and Measles curable and incurable.*

CHAP.

CHAP. I.

Of the causes of the Small-Pox; also how it comes to pass, that scarce a mortal, except by chance here and there one, escapes free from them; together with a short detail of what Galen has recounted of them.

AS to the physicians, who assert that the most excellent Galen made no mention of the *Small-Pox*, and consequently knew nothing at all of them; it is very plain those never read the books of Galen, or at least cast here and there an eye very superficially and transiently: What? say most of them are at a loss to know, whether that, which he elegantly says of the *Small-Pox*, be really understood as he intended it.

FOR Galen prescribed in a certain treatise, and said, that such a thing is good *after this and that manner, and also against the Small-Pox*. And in the beginning of a treatise of his fourteenth book *Concerning the pulse*: that *the blood grows more than ordinarily putrid, and comes to that pass, as, thro' an excess of inflammation, to burn the skin, and at length the Small-Pox are in clusters on it, and a pestilential, excoriating, eruption, so that the skin is consumed.*

AND

AND in the ninth tract of his book *Of the use of the limbs*, he says, *that the redundant parts of aliments, that are not converted into blood, and remain in the limbs, putrefy, and, in process of time, acquiring greater bulk, ferment; from whence it happens, that at length is generated a pestilential anthrax, and the Small-Pox breaks out, and a number of inflammations.*

LASTLY, In the fourth treatise of his *Commentary upon a book of Plato, entitled Timæus*, he says, *The ancients applied the word φλεγμὴ to every thing, accompanied with a redness, such as an anthrax, and the Small-Pox; and that these sorts of diseases are generated in those, in whom bile is predominant.*

BUT as to those, who say, that *Galen* prescribed no remedy, by way of an adequate and sufficient cure; nor explained the manifest cause of this distemper, in consequence of having made an accurate enquiry into it, they, indeed, say the truth: for in reality he makes no other mention of this disease, than what we have recounted. But God knows whether he has not mentioned it in those books of his, which have not yet appeared in *Arabic*.

As to my own particular, I have been taking extraordinary pains a great while, in asking those, who were skilled in the *Syriac*

and *Greek* languages, to satisfy me as to that point: but there was nobody amongst them, not one, who could let in any light upon that affair, but what I have taken notice of.

FOR my part, I am very much surprized, and wonder how it came about, that *Galen* should pass over this disease in all that silence; especially as it was very rife in his time, and consequently there were such weighty reasons for recurring to medicines for its cure; and as he was indefatigable in tracing out the causes of other diseases, and assigning the proper remedies for them.

IN regard to the moderns, they have, indeed, specified some medicines for the cure of the *Small-Pox*, but in a vague, immethodical, manner. Nor is there found a man amongst them, who has touched on the cause of that distemper; or explained how it falls out, that scarce a mortal, except here and there one, escapes being infected with it; or pointed out its method of cure, by treating every particular distinctly and regularly.

FOR this very reason, I hope, that great will be the reward of the personage, who put me on composing this treatise; and that I myself shall reap a double recompence, after

after I have executed all that is requisite for the cure of this disease, by circumscribing the whole work within its proper bounds, and distributing it into the respective chapters, and after that, God willing, by assigning to every circumstance its distinct place.

LET us then set about mentioning the efficient cause of this illness; and, in the next place, account for scarce a single individual's going to his grave without it. After that, I will particularize the other appurtenances in some subsequent chapters; and, with the help of God, treat of every thing necessary to the cure of this distemper.

I say, therefore, that man(1), from the time of his birth, till he even arrives at an extreme old age, is making a perpetual progress towards a state of aridity: and that from thence it proceeds, that the blood of children and infants, and the blood of young people in proportion, abounds much more with moisture, than the blood of those advanced in years; and that it is, moreover, hotter.

AND this, in fact, was the doctrine of Galen, in his *Commentary on the Book of Aphorisms*, where he says: *The heat in children exceeds that in youth in point of quantity; but the heat in youth is of a more vehement quality.*

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WHICH

(1) Here first begins the Greek translation by an anonymous interpreter.

WHICH is even demonstrated from the goodness of the natural functions, namely, digestion, or the concoction of aliments, and accretion in children. On which account the blood of infants and children is like new wine, that has not yet began to undergo any concoction conducive to its perfect maturity, or the least motion tending to fermentation. But the blood of youths resembles new wine, under a fermentation and an evaporation, till such time the wine acquires a state of tranquillity and ripeness. Lastly, the blood of old people is like wine, whose virtue is evaporated, so that it is become flat, and beginning to be chilled and pricked.

Now, the *Small-Pox* arise, when the blood grows putrid and ferments, and there is a protrusion from it of moist particles, the infantile blood, that is like new wine, being changed into the blood of youths, which is like wine in a state of maturity.

AND the *Small-Pox* themselves are that heat and ebullition, which is wont to be produced in new wine during its fermentation.

AND this is the reason, why children, especially boys, scarce ever escape them. For
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the same thing without doubt happens from the change of the blood from this first state to the second, as it is questionless the case in regard of the change accruing to new wine; which is endued with a property of boiling up and fermenting in that state, till, that fermentation over, it arrives at maturity. And, truly, there rarely occurs such a constitution in an infant, or child, as is capable of bringing about a change of the blood from the first to the second state in a little space of time, and without manifest tokens: which one may easily conclude even from their regimen, or diet; for the diet of infants consists in milk. As to children, although the diet of these does not entirely consist in milk; yet their aliments are, in proportion, stronger than those of the rest of mankind, and their mixture more considerable. To which add, that in those, after eating, comes on a more vehement motion of the humours. For these reasons, therefore, there are very few children exempt from this disease.

To this succeeds a change of the situation of affairs according to the diversity of constitutions, and regimens, and habits, and of the circumfused atmosphere, and state of the blood, which in their veins differs both in quantity and quality: for the same blood flows swiftly in these, in those moves on

more slowly; abounds in some, in others is defective; in certain persons is of a very depraved quality, in others again of a quality less vitiated.

BUT as to what appertains to youths; when a change is now wrought in their blood from the first state to the second, and its maturation perfectly accomplished, and the moist particles exhaled from its mass, which ought to produce putrefaction; hence it follows, that this distemper does not arise in them, unless in very few of them at least, in those, for example, in whose veins the blood abounds with too much moisture, or is of a bad quality, with a violent inflammation; or if by chance, when they were children, they had the *Small-Pox* lightly then, when the change of the blood from the first state to the second was not as yet perfected.

THEY happen likewise particularly to those young men, who have but a sluggish heat, or one without overmuch moisture; as also to those, who, in their childhood being attacked by a light *Small-Pox*, turned out of a dry and lean temperament.

BUT when men are advanced in years, this disease will scarce, or rather never, arise in them; unless by chance in a pestilential, putrid, and malignant state of the air;

air; when this distemper grows very rife. Inasmuch as such a sort of air very much disposes bodies both to heat and moisture; and the heated air forwards and promotes the eruption of this illness: for, by agitating the spirituous matter, that is in the two ventricles of the heart, it communicates to it a habit like its own; after that, it leads the whole arterial blood, by means of the heart, to the same state of corruption.

I have thus far spoken of the causes of the *Small-Pox*, sufficiently and briefly: I shall therefore now treat of the bodies, which are fit and disposed for receiving the *Small-Pox* and *Measles*.

CHAP. II.

Of Bodies, which are fitted and disposed for receiving the Small-Pox.

THESE are in general terms bodies, that are moist, pale, full of flesh; as likewise those, that are inclined to look red and brown, inasmuch as they are loaded with flesh. Also those bodies, which are frequently obnoxious to acute and continual fevers, an hæmorrhage, blood-shot eyes, red spots, and boils proceeding from the eating of sweet things; especially dates, honey,

and figs, and grapes, and whatever is of a luscious nature, as they are always incrassating the humours; such as thick gruel, and flummery made with honey in it, or a larger quantity than ordinary of wine and milk.

BUT lean, bilious, hot, and dry, bodies, are fitter and more disposed for catching the *Measles*, than the *Small-Pox*. But should they be seized with the *Small-Pox*, it is impossible, but that those must be either few in number, distinct, and light; or, on the contrary, turn out of a very bad sort, enormously large, no ways answering nature's purpose, dry, putrefied, and without coming to a head.

— LASTLY, lean and dry bodies, with a coldness of constitution, are by no means fit and disposed for taking the *Small-Pox*, or the *Measles*. But should they be infected with the *Small-Pox*, they have but few, and those light, moderate, safe, accompanied likewise with mild, gentle, fevers: because bodies of this sort are wont to keep the *Small-Pox* under from the very beginning.

AS to the times, or seasons of the year, in which the *Small-Pox* are accustomed to rise, these are various; but the principal are the latter part of *Autumn*, and the beginning
of

of *Spring*; and when in *Summer* there fall heavy and frequent rains, and the southern winds blow strongly and without intermission; and, in the last place, when the *Winter* is warm, and southern blasts are predominant.

BUT when the *Summer* becomes excessive in respect of heat and drought, and is succeeded by a hot *Autumn*, with a very long adjournment of rain; the *Measles* then invade those hastily, who are fitted and disposed for the reception of them, those, namely, who have lean, hot, and bilious bodies.

THERE is, notwithstanding, very often a diversity in respect of these, thro' a diversity of countries and climates, and an occult disposition in the air; which necessarily produces those distempers, and renders bodies apt to receive them. From whence it happens, that they are not confined to any particular season.

AND then we ought to be extremely diligent in preserving our selves against those diseases, immediately after we see them begin to grow epidemical; and that in the manner I shall mention in the following chapters.

CHAP.

CHAP. III.

*Of the prognostic signs, or those that fore-
shew the eruption of the Small-Pox and
Measles.*

THE eruption of the *Small-Pox* is preceded by a continual fever, and a pain in the back, and a tickling in the nose, and frightful dreams. These indeed are the genuine signs of the approaching *Small-Pox*, particularly the pain in the back, and fever; as also the pricking the sick feels all over his body; likewise the plumping of the face, then its sinking to its former state, and the ruddiness of it, and the different degrees of redness; a redness of the eyes, a heaviness of the whole body, frequent gaping, a pain in the throat and breast, with a certain difficulty of breathing, and clogging up of the jaws; also a dryness of the mouth, thickness of the spittle, hoarseness of voice, headache, heaviness of the head, uneasiness of mind, weariness, squeamishness, and sadness; only this uneasiness, squeamishness, and sadness, are more urgent in the *Measles* than in the *Small-Pox*, unless the *Small-Pox* are of a bad sort; for the *Measles* come from a very bilious blood: and, on the other hand, the pain of the back is more peculiar to the *Small-Pox* than *Measles*; as is the
hotness

hotness of the whole body, and its inflammation, redness, and shining, and particularly the heat in the throat.

WHEN therefore you see those signs, or some of them, especially the more violent; you may conclude that either the *Small-Pox*, or *Measles*, is on the point of breaking out in the sick.

As to what regards the safer kinds of *Small-Pox*, the blood in them rather exceeds in quantity, than is vitiated in respect of its quality: and this is the reason, why they come on with a pain in the back; inasmuch as the large vein and artery, situated near the vertebræ of the shoulder-bones, from a plenty of blood, suffer too great a distension.

CHAP. IV.

Of the Articles of the Regimen, or Method of curing the SMALL-POX in general.

THE first article, the securing a preservative, before the signs of the *Small-Pox* appear; and how they are to be kept under, after the signs of them have appeared.

THE second article, how care is to be taken

92 *Of the Articles of Regimen;*
ken about the eruption, and protrusion of
them.

THE third article, a foresight to be had concerning the eyes, and eye-lids, and auricular passages, and cavity of the nostrils, and the throat, and joints; so that no ill consequence supervenes in regard of these parts.

THE fourth article, how to forward their maturation.

THE fifth article, the method to hasten their drying up.

THE sixth article, how to remove, or take off, the scales of the *Small-Pox*, and the *ἑρχαμί*, that is, the scabs, from the eye, and the rest of the body.

THE seventh article, how to efface the marks from the *Small-Pox*.

THE eighth article, concerning the regimen in respect of the aliment, or the diet of one, labouring with the *Small-Pox*.

THE ninth article, of the regimen of nature, or of the belly of one, labouring with the *Small-Pox*.

THE tenth article, of the curable and incurable *Small-Pox* and *Measles*.

I therefore am going to deliver myself on every one of these heads, in a summary, yet satisfactory, manner, with the great and good God's permission.

C H A P. V.

Of preservatives from the SMALL-POX, before their appearance; and the method of bindering them from multiplying after their eruption.

BLOOD must be taken away from children and young people, that have not yet been seized with the *Small-Pox*, or from those who have been seized but slightly; especially in those states and seasons, which we have above described, before they grow feverish, and exhibit any signs of the *Small-Pox*. Now, a vein must be opened in those, who are fourteen years of age; but to those, less advanced in years, cupping-glasses are to be applied, and their apartments to be cooled.

LET their diet be lentils; eatables impregnated with verjuice; and meat minced (some times raisins of the sun are added, together with a few figs, and pease) with vinegar and honey,

honey, or some sour syrup; or let their food be broth made of goat's flesh: let them also eat calves-feet jelly, and veal, snipe, and chicken broth. But all these sort of eatables should be acidulated with verjuice.

LET their drink be water cooled with snow, or water cold from the spring, with which also let their apartments be sprinkled.

LET the sick frequently suck pomegranates, and swallow the inspissated juice of acid and astringent fruits; such as that of pomegranates, ribas, (1) and other vegetables of this kind.

BUT should any one be of a hotter constitution than usual, and more than ordinarily inflamed, let him drink barley-water prepared according to art every morning; with pomegranate-juice squeezed into it, in the proportion of half a pint of juice to a pint and a half of the water.

BUT in case the sick be not of so hot a temperament, let his morning's draught be barley-ptisan with sugar; and mix vinegar with his food, and lentils, and pomegranate-juice, and particularly verjuice; inasmuch as by these means you will incrassate

(1) *Ribas* is a Sort of third part, is commonly
sorrel, whose red and acid | called *Rob de Ribes*. See
juice, boiled away to a | *Golius's* Lexicon.

incrassate, and at the same time cool, the blood; on which account there will be a great abatement of the variolous struggle and fermentation.

AND this regimen will be of singular service in all pestilential seasons: by reason that it takes off from the malignity of the contagious ulcers and boils, keeps off quinsys and pleurisy, and all illnesses in general, that proceed from the bile and blood. Moreover let your people go into a cold bath about noon, wash themselves, and swim in it.

LET them abstain from new milk, wine, dates, honey, and absolutely from every thing that is sweet, and from dishes made of a mixture of various kinds of meats (1); from mutton, and beef, and lobsters, and high-seasoned and pickled things, as also from hot feeds.

BUT, in a contagious and malignant season, let them eat chicken; as also, should they be of a constitution hot, and moist, consequently subject to putrefaction; or of one hot and dry, liable to be inflamed; taking at the same time the medicines, which we shall now describe. For example, give to those of a hot, dry, and inflamed, temperament,

(1) The Arabic word properly denotes Food, pre- pared from flesh, onions, oil, butter, and old cheese.

ment, cooling, moist, and refreshing vegetables; such as porrlain, mallows, beet, gourd, and cucumber, and sorrel, and small pompions.

As to what regards melons, especially those of the sweet kind, these must by all means be prohibited: but, should they have been eaten of by accident, let a spoonful be drank immediately of the juice of some acid fruit.

LET them likewise diet on fresh fish, and whey.

As to those, whose bodies are fat, fleshy, of a pallid, or of a red, hue; with their supplings must be mixed, as has been already taken notice of, whatever is of a cooling and drying nature.

ALL of them being warned against labour, fatigue, bathing, venery, walking, and riding, in the sun and dust; drinking stagnating water, and against fruits and pulse touched with a blasting and mildew.

LOOSEN their body, when it is necessary, with the juice of prunes and sugar, or whey and sugar.

LET them be cautioned against figs and grapes; because figs generate pustules, and drive

drive out the superfluous humours to the surface of the skin; and it is the property of grapes to fill the blood with wind and flatulencies, and consequently to render it yet more disposed to bubble and ferment.

BUT should there be a great depravity, putrefaction, and pestilence in the air; the face must be continually sprinkled with sanders-water, and camphire; which will have a good effect, with the permission of God.

IN respect of infants and sucking babes, apply cupping-glasses to those, that are above five months old, in case they are fat, pale, fuddy. Moreover, put the nurse, that gives them suck, under the regimen, as much as possible, we just now spoke of.

Now must we point out the medicines, that thicken and cool the blood, and restrain its putrefaction and ebullition.

THIS end promote all things acid, and particularly the water called al-raib, that is, a very four whey; which is a small acidulated, bitterish, water, that ascends above the whey, on exposing it to the sun; and the juice of citrons.

A great many things besides are equally highly serviceable, that are endued with an
H astringent

astringent faculty jointly with an acidity; such as verjuice, and the *Syrian* rhus, rob of *Corinthian* grapes, apples, quinces, and acid pomgranates; and what naturally thicken the blood, as jujubes, vetches, coleworts, coriander, lettuce, poppies, endive, winter-cherry, Bambu-sugar (1), flea-wort-feed, and camphire.

THIS is, besides, the description of the medicine, which allays the ebullition of the blood; and is good against the heat and fervour of the liver; and the fiery quality of the bile.

TEN drachms of red roses bruised; two ounces and a half of Bambu-sugar; *Syrian* rhus, the greater wood-sorrel-feed, vetches, berberries, porrlain-feed, white lettuce-feed; of each five drachms; two drachms and a half of white sanders; and a drachm of camphire.

LET three drachms be mixed with the drink of the sick, every morning, with an ounce of wood-sorrel-juice, a quencher of the thirst, or of the juice of *Corinthian* grapes, or pomgranate-juice, or verjuice, and such like.

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(1) So it is filed in *India* — gar from a larger *Indian* *tree*, and is a sort of a su- cane than ordinary.

HERE likewise is of service a medicine called Al-facangjabin, that is, a saccharized oxymel, prepared after the following manner.

TAKE one part of sharp, clear, red vinegar, and two parts of rose-water; mix, and steep herein an ounce of dried red rose-leaves, as also half an ounce of pomgranate-flowers, and two ounces of the peel of pomgranates, for the space of three days. Then let it be strained, after you have added, proportionably to the weight of vinegar, a double or tripple quantity of fine loaf-sugar. This done, boil it sufficiently, for use.

It will be of benefit, likewise, to take ten drachms of roses, and a like weight of Bambu-sugar; three drachms of white sanders; a drachm of camphire; and work them up with the mucilage of flea-wort-seed, into pills or lozenges. Along with the drink, when it is necessary, give three drachms of this Composition, with an ounce of the aforesaid medicine Al-facangjabin.

MOREOVER, the syrup of the following composition will be of very great advantage; being wonderfully superior in point of efficacy to the virtue of all other syrups, as far as we have ever seen and experienced: un-

less it be the syrup of pearls, described by the *Indians*, though with a different issue, than what we find it attended with. For they tell us; That if any one takes of that syrup, who has nine spots come out, he will not have a tenth.

Now this is its composition. Take three pints of clear, old, sharp, red vinegar; acid pomgranate juice, acid juice of citrons, verjuice, water or juice of wood-sorrel, the juice of *Syrian* mulberries, the expressed juice of *Syrian* rhus, and of berberries, of each a pint; a quarter of a pint of lettuce-juice, and the like quantity of the juice of terragon; a pint and a half of the decoction of red jujubes, and an equal proportion of the maceration of vetches. Mix the whole together, with the addition of three pounds of sugar; when it is well bruised, boil it, and pour off some of the syrup now made, and that while it is hot, and beat it with a pestle, till it be dissolved; then mix it with the whole, continually stirring it with a slip of camphire cane: then throw it into a marble mortar, or one made from the trunk of a willow, and save the purest part of it, from the beginning to the end. Lastly, after you have added Bambu-sugar, and camphire, till they are incorporated; use it, before the appearance of the signs of the *Small-Pox*, and after the *Small-Pox* have appeared, in the manner

manner I am about to point out. And in all illnesses proceeding from the blood and bile, pestilential ulcers, boils, infarctions of the throat, and such like complaints, it is a most useful remedy, with the assistance of God.

AND let these things in general suffice on this head of preservation from the *Small-Pox*, before the coming on of the fever, which the signs of the *Small-Pox* are wont to accompany.

By this syrup are the *Small-Pox* repelled from a person, whose body is so prepared, as to be susceptible of such a repulsion; so that the portion of the *Small-Pox*, that is to be his contingent, must necessarily be light and moderate. It prevents likewise the change of the blood, from the first state to the second, from being made with too much precipitation, and in too small a space of time, with an ebullition and fermentation, accompanied by dangerous and frightful symptoms; but by little and little, insensibly, and in a longer time, and successively; and by way of maturation, not by way of putrefaction; without dangerous, malignant, terrible, and excruciating, fevers.

BUT when the fever arises, attended with the signs of the *Small-Pox*, we must no

longer stick to this regimen ; at least without a previous and mature consideration, diligent attention, and prudent caution : because a wrong step here would draw after it very dangerous consequences ; and that for this reason, inasmuch as while the blood is agitated, and increased in bulk, and, proportionably to the constitution, nature is endeavouring to throw off its redundancies, or detach it to other parts of the body ; if at that time your condensing, your refrigerating, method, by means of which you intend to cool it, should not arrive at a greater degree of coldness and density, than there was subsisting before ; the consequence will be, that it will fall to fermenting even a second and third time ; you all the while being contradicting nature, and hindering her from performing her work. Nor is it possible to quiet her, under that vehement ebullition of the blood, but with great difficulty : namely, by administering those things which congeal and incrassate it : such as opium, hemlock, a great deal of lettuce-juice, winter-cherry, and other things of that kind ; with a diligent attention to the regimen we have laid down. Nor is it safe, to chill the blood, by a practice of this kind, and extinguish natural heat ; for fear of an excess, which is on this occasion easily committed ; for if you exceed the just bounds, you will never manage matters so, as to allay this violent fermentation,

mentation, and at the same time preserve the necessary natural heat. Lastly, when in these affairs you are not sufficiently guarded, you go to such a length, as to extinguish preternatural and natural heat both at once.

I will in this place tell you a circumstance you ought to observe, which physicians commonly take no notice of, some of them thro' ignorance, others from a motive of avarice, to engross all the profit to themselves; don't you with them offend grievously against nature; and that through the benevolence of the good and great God.

WHEN therefore you see the signs of the *Small-Pox*, and at the same time observe a distention of the body, too much tumbling and tossing, a pain in the back, a redness of the complexion and eyes, a very violent head-ach, and a high and full pulse, as also laborious respiration, and red, turbid, urine; the body likewise feeling hot to the touch, like the case of a person, that has been in a bath for some time; if there be moreover a corpulency, then reason tells us, that we must bleed.

TAKE therefore blood away in a considerable quantity, even to a *deliquium animi*. And it will be best to draw it from the basilic vein, or some branch, or ramification, of

it: but, if this cannot be found, from the cephalic. Or bleed in the vena poplitis, or the saphæna; when there is no finding the basilic vein, or any of its ramifications. But it is more eligible, to open the basilic, or some one of its branches: for those veins determine the blood from the greater vessels, that are in the abdomen, more than does the cephalic.

BUT when the signs are not very strong, though altogether evident; bleed indeed, but more sparingly: and when they are in a lesser degree, take away but a little blood. After that set about the cure, by exhibiting coolers, in the manner I have explained,

WHEN moreover you find those remedies have now removed the feverish heat, and the pulse and breath to have recovered their natural state, proceed in the farther administration of them; for by this means you will in a short time entirely free the sick from the violent heat he feels through the *Small-Pox*.

BUT to effect this more efficaciously, let him drink plentifully, and without any restraint, water cooled in snow to the utmost extent of frigidity, and that at short intervals; so that the sick may be sensible of an
op-

oppression from it, and perceive its coldness in his bowels.

BUT should he be feverish after this, and find the heat return; let him recur to the drinking it a second time, from a quart to three pints, or more, in the space of half an hour.

AND should, notwithstanding, the heat return, and the stomach be quite full of water; make him vomit it up: then give him water afresh to drink. If upon this the water, passing, be evacuated, either by sweat, or urine, it is a sign that a recovery is at hand.

BUT if the water be obstructed in its passage, or you find an increase of the feverish heat, and that even to a greater degree than before; slack your hand in respect of the cold water, and recur to the other cooling expedients, which I have described: and in case you perceive the sick to be relieved by them, continue their use, and the road you are in.

BUT, on the contrary, should you experience them to bring on an uneasiness, and a destructive inquietude; or if you observe a general disorder, and a vehement and excessive restlessness; it is an infallible sign that
the

106 *Of forwarding the Eruption*
the *Small-Pox*, or *Measles*, are just on the
point of eruption.

ON which account, you must then lay
aside this regimen, and proceed to the help-
ing of nature ; in order to enable her to ex-
pel and throw off all superfluities, after the
manner I shall sketch out in the following
chapter.

CHAP. VI.

Of those Things, which forward the Eruption
of the *SMALL-POX*.

THE eruption of the *Small-Pox*, and
Measles, is promoted by the following
method. You must cloathe the sick, and
rub his body ; must place him where it is
not very cold ; and give him spring-water a
little at a time, and successively ; in order to
bring on, and force, a sweat, that may assist
in the protrusion of the redundant hu-
mours to the exterior parts of the body.

INVEST the sick with a double garment,
and confine the flowing of the borders of it.
Under it place a couple of small basons of
hot water, one before, and the other be-
hind him ; so that the steam may be received
by

by the whole body, except the face; and the skin by this means rendered more pliable, and better disposed for receiving that humour, and for the protrusion of it. For while the surface of the body is in this state, it may be compared to a leech, which, by reason of its heat, attracts, in order to cool itself, whatever is most subservient to that end. But it happens, that, by this method of regimen, the surface of the body grows soft, and the strength of the sick at the same time preserved: nor is there any thing, in this state, more to the purpose; to wit, than thus wrapping him in cloaths, rubbing him, and fomenting his body with hot water, as has been hinted.

Now, as to stoves and baths, both of them are pernicious in these circumstances: as they heat too much, and excessively weaken the strength, and are so oppressive, as to bring on a *deliquium*. Whereas, when a fainting arises, nature is diverted from her seasonable work, and the sick is in danger; especially, when this fainting is vehement and lasting. For nothing is more demonstrative of approaching death, particularly here, than such an accident; as it shews, that nature is just sinking, and on the point of contracting itself, and retiring to the inner recesses of the body: an immediate consequence of which will be, an oppression
and

and extinction of her, from the redundancy of the humours. But care must be taken, to prevent the hot steam from growing cold on the surface of the body, after it has been fomented ; but it must be presently dried up, by wiping it off with great circumspection and diligence. And this method will abundantly facilitate the protrusion of the superfluous humours to the exterior parts ; on condition, that nature be not languid, nor the superfluous humours too viscid, and, on that score, harder than ordinarily to be thrown off.

BUT when there is a remission and an abatement of the fever, in the superficies of the body ; while the anxiety and inquietude remain, and the eruption of the *Small-Pox* succeeds with great difficulty ; stay till the fifth day is over : for then it will be unavoidably incumbent on you, to make use of such medicines, as promote the eruption. But great care, prudence, and all manner of attention are requisite on this occasion ; in the manner I have already suggested, when I made mention of the conditions and laws of coolers in these circumstances. For a mistake in this case, though not of that consequence as the former, is still of consequence. Wherefore the caution, against falling into a mistake in this place, consists principally in not rashly ad-

adminiftring too great a plenty of drugs, but perfifting constantly in the former regimen, as long as you are in hopes you may eafily do without them; and while you are not pofitively fure, that the fever is abated in the inner parts, proportionably to its remiffion in the external furface: and, indeed, that you will be perfectly apprized of, if the pulse and refpiration be not quicker, nor increafed, nor irregular; nor the breaft feel extremely hot to the touch. For you muft know, that, although the fever be increafed in more than a double proportion, the fick is not, on that fcore, going to rack through the vehemence of the heat. And this matter you may be perfectly acquainted with, by comparing this fever with others, which you meet with here and there, in like conftitutions, and in the fame degree of heat, where the fick has recovered, and been intirely freed from the fever.

THE fame remedies are alfo to be made ufe of, when, on the eruption and appearance of the *Small-Pox* on the fkin, the fick finds himfelf lightifh and eafy, and, on feeling the pulse, that and refpiration equally correfpond. But, on the other hand, if you obferve the eruption of the *Small-Pox*; and their protrufion, to go on but flowly, and with difficulty; you muft then be fparing,

sparing, in this situation, of coolers: for it is contradicting nature to make use of them, and hindering her from protruding the humours to the surface of the body. But when any anxiety is subsequent to the administering coolers, conclude you have erred. And should a palpitation of the heart come on, be assured you have been very grossly mistaken. Wherefore, that very moment, you must be as industrious as possible in softening the skin, in the manner I have taught: then give, one draught after another, hot water, either by itself, or in a decoction of fennel-seed, and parsley-seed, and other simples of this kind, conducive to the facilitating the eruption of the *Small-Pox*; according as you observe the proportion of heat and inflammation attending it, and the strength of the sick; having at the same time an eye to the heaviness and dullness of the *Small-Pox*, and the slowness of them in making their exit.

THE description of a lenient, quieting, medicine, which, without over-heating the body, promotes the eruption of the *Small-Pox*:

TAKE thirty ripe figs; two ounces and a half of raisins of the sun, stoned: pour upon them three pints of water, and boil them till all the pulp is out. Let the sick drink

drink half a pint of this ptisan, three times ; afterwards, let him be wrapped up warm, and fomented in the manner, as before prescribed.

THE description of a medicine more efficacious than this.

TAKE the quantity of four ounces of the foregoing decoction ; and two ounces of the decoction of fennel-seed, and parsley-seed ; and let him drink it as we have directed.

AND of one still more efficacious.

TAKE fennel-seed and parsley-seed, of each ten drachms ; boil them in an earthen vessel, till the water looks red : then strain it, and let him drink of that liquor the quantity of three ounces.

THE following compound medicine also is good in several seasons, being salutary and useful.

TAKE four drachms of red roses ; nine drachms of husked vetches ; ten ripe figs ; three drachms of gum tragacanth ; ten drachms of white raisins in the sun, stoned ; three drachms of lack, cleared of its stalks, and washed ; fennel-seed, and parsley-seed, of each five drachms. Boil the whole in a quart

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quart of water, to a pint: strain it; then give half a pint of it to be drank, with a sixth part of a drachm of saffron, twice or thrice, as necessity shall require.

Now let us speak of the places, or parts of the body, which ought to be taken care of.

C H A P. VII.

Of the Cure of the Throat, Eyes, &c. when the Signs of the Small-Pox have appeared.

AS soon as ever there is the least appearance of the signs of the *Small-Pox*, singular care ought to be taken, first of the eyes, then of the throat; after that of the nose, ears, and joints, in the manner I am about to direct. It will moreover be sometimes necessary for us to extend our concern to the soles of the feet, and the palms of the hands; for generally violent pains arise in those places, while the eruption of the *Small-Pox* advances but slowly, through the hardness of the skin.

Drop into the eyes, on the appearance of the signs of the *Small-Pox*, some rose-water,

when the Small-Pox have appeared. 113

water, successively ; and wash the face with cold water, several times a day, and sprinkle some of it also into the eyes. For if the *Small-Pox* chance to be few and light, you will prevent them by this method from settling in the eyes ; and, indeed, we ought so to do, if it were only by way of precaution : for, in case the *Small-Pox* be distinct, light, and not impregnated with much matter, it scarce ever, or at least very seldom, happens, that there is any eruption on the eyes. But when you find this distemper break out violently, and the pustules to be numerous from the beginning of the eruption, and an itching to come on the eyelids, with a redness in the white of the eye, and that redness to affect from its intenseness some neighbouring places ; there is no doubt, but there will be an eruption in those places, unless it be very industriously prevented. Wherefore, that instant, drop into the eyes some rose-water, in which has been macerated *Syrian* rhus, and that several times a day.

A medicine more efficacious than that.

MAKE a collyrium of galls and rose-water, and drop a little of this into the eye : or chew the pulp of a sour pomgranate, and make an eye-water of that, and of its squeezed juice. Then wash the eye-lids
I with

with a collyrium compounded of quince-water, verjuice, lycium, aloes, and sloes; of each of these take one part, and a tenth part of saffron. If therefore you drop a little of this collyrium into the eye, it will be very serviceable at this time.

BUT in case you observe the matter turgid, and the *Small-Pox* to come out in prodigious plenty; and conjecture that they will certainly break out on the eye, from an appearance of redness in some places in the white of it, through a violent inflammation and swelling; and you find that what you have dropped into it, according to the foregoing directions, has contributed nothing to its removal, and that all you have effected, has been only to procure a little ease, and that the disorder returned again in a short time with the greater violence, or, at least, remained in the same situation it was in, when you first attempted to remedy it; desist from dropping into the eye any more of these, or the like, medicaments; but, instead of them, drop a little of the four water that is squeezed out of mouldy bread, together with bitter nabathæum, that has no vinegar, or any acid whatever, in it.

As to those *Small-Pox*, which sprout up in the cornea of the eye, these cloud the sight; and in proportion to the thickness, or thinness,

when the Small-Pox have appeared. 115

thinness, of their substance, it will be necessary to remedy them by some very great dissolvents, we shall point out by and by : which will sometimes succeed, and sometimes not ; just as the matter shall happen to be more or less dense, or shall occur in a body, that's hard, or dry.

BUT if there be an eruption of any large pustule in the uvea, or black of the eye ; apply the collyrium of rose water, and drop some of it into the eye several times a day, and whenever the sick does not sleep, and that diligently : or use the collyrium mentioned above, but without the saffron : instead of which, substitute a little blood-stone, in order to prevent its puffing up, and swelling too much.

AND this is what is worth knowing in this place in regard of the eyes. It now follows, that we treat of the management of the throat and mouth, to hinder an eruption in respect of either, which would prove very troublesome to the sick, or obstruct his respiration. For it often falls out, that vehement and terrible suffocations attend a violent *Small-Pox* ; and when that's the case, all hopes of a recovery are over.

ON which account, it is necessary, as soon as the signs of the *Small-Pox* begin to appear, to

gargle the mouth with acid pomgranate-water, or *Syrian rhus*, or the juice of mulberries, or something of what we mentioned in the (Vth) chapter concerning coolers; or, lastly, with cold spring-water, if you can get nothing else; and that several times, lest there should be too great an eruption in the throat and mouth: but rather let those parts be well comforted, by way of guarding against too great a number of pustules, and, the consequence of them, suffocation. Recur immediately to this remedy, and be very diligent in administering it; as soon as ever, with the other signs of the *Small-Pox*, you find a hoarseness, and a difficulty of breathing, and a pain in the jaws and throat. If moreover you observe there is sufficient strength, bleed in the cephalic vein; and that, even after the eruption. But in case there be any thing then in the mouth, or throat, of the sick, that is offensive; provided the blood be not too much heated, nor any relaxation of nature subsisting, nor a looseness; order the sick a linctus of fresh butter, and sugar-candy. But, on the contrary, should the parts be inflamed; give him flea-wort-seed, and sweet almonds, sweetened with loaf-sugar.

A description of the medicine.

TAKE one part of sweet almonds, blanched; two parts of gourd-seed; three parts

parts of hard sugar-candy ; the mucilages of flea-wort-seed, and laurel-berries ; and the linctus made of gum *Arabic*, and sweet almonds, and plantain-seeds, and flummery : mix these all together with the mucilage of quince-kernels.

AFTER this, care must be taken of the joints : for the *Small-Pox* frequently invade those parts, very thick, and of a very malignant and destructive nature, so that the bones and muscles, tendines and nerves, are laid, from their erosion, quite bare. Obviate therefore this catastrophe as early as possible, after the signs of the *Small-Pox* have appeared ; especially, if you observe them to be violent, and confluent to an excessive degree. But when you set about remedying the joints, bathe them with sanders, and quince-water, Armenian bole, roses, camphire, vinegar, and rose-water : but still take care not to be too lavish of your bathing. But, should this eruption on the joints be considerable, immediately open the pustules with a lancet, and let out the imprisoned matter. Nor by any means defer this operation : for it is a very dangerous situation.

In the next place let us take care of the nose and ears ; lest in either part the pustules should be numerous : for the sick suffers

extremely from too great an eruption ; and when they break out on the inside of the ear, one has reason to apprehend, they will immediately infest the nostrils. On this emergency, get a cotton rag, that has had camphire pounded in it, and by the help of this apply some sharp-flavoured wine-vinegar to the inside of the ear, mixed with quince-water, or the juice of lycium ; and pour some of it into the ear after sleep. Do this twice or thrice a day.

Now, if a violent pain arise in the sole of the foot, anoint it out of hand with warm oil, and supple it with cotton dipped in hot water. But should the pain be no ways allayed by these means, nor the exit of the *Small-Pox* facilitated ; bruise some husked sesame in milk, and apply it by way of pultice to the part, and let it lie on all night. After that, put the foot again in warm water, and repeat the pultice. Or apply a liniment of bruised dates and butter ; or the lees of wine, or dregs of the oil of sesame : for those, and things of that nature, are emollient, and relax the skin ; and therefore promote the eruption, and remove pain.

CH A P. VIII.

How the SMALL-POX are to be brought to a Head.

WHEN you observe the *Small-Pox*, after a compleat eruption, to make but slow advances towards maturation, and nothing to be amiss in respect of the sick; and find the breath and pulse to be regular in the like manner; and a restlessness, notwithstanding, and an uneasiness; it will then be necessary to attempt to help on the maturation of the *Small-Pox*.

BUT if, along with a difficult maturation, the pustules appear hard and warty, and the sick no ways mended; or there be an increase of the depravity of the disease; it is a sign, that such a circumstanced *Small-Pox* is mortal. Therefore, never expect them to come to a head: as they are of a kind, that can by no means arrive at a state of maturation.

THE ripening, then, of the *Small-Pox*, if of a curable nature, must be effected by fomenting them with the steam of a hot decoction of camomile, and violets, melilot,

marsh-mallows, with some bran, in the manner as above directed, when I treated of the method of facilitating the coming out of the *Small-Pox*.

Now, should the sick at that time seem to find any relief and refreshment from the fomentation, one ought to abstain from the use of those fumigations, which are customarily used in order to dry up the *Small-Pox*; till they are ripened of themselves, and can away with those things, which are conducive to this end: concerning which we shall discourse by and by.

CHAP. IX.

Of the drying-up the Small-Pox.

SHOULD the *Small-Pox* be large and confluent, they must be dried up; and the water ought to be taken from them by the means of a clean fine cotton-rag, clear of any thing, that may prove injurious to the sick. And at the same time perfume the room with dry rose-leaves, or leaves of the storax-tree, or sanders, or orrice-leaves, or tamarisk: and, indeed, roses are more proper in summer, and tamarisk in the winter.

THE

THE *Small-Pox* sometimes abound with too much moisture. When this is the case, order the sick to lie upon bruised roses, or the flower of rice, or on millet-flower, crammed into a coarse tick.

BUT, if the body be full of pustules, put under it some moist orrice-leaves; and springle on it some aromatic powder, compounded of aloes, frankincense, sarcocol, and dragon's-blood.

IF the pustules, either of their own accord, or from an abundance of water, should break, without hastening to dry up; manage them after the following manner.

TAKE an ounce of oil of sesame; and with the addition of two drachms of Andarsalt (1) powdered, and a like quantity of alum, make a liniment. Anoint the body with this, except where it is excoriated and ulcerous: for nothing of it must come near those places; as it would inflame them to a violent degree. Let the liniment remain on the part an hour; then wash it off with a decoction of myrobalan-husks, and white tamarisk-berries, and myrtle-leaves, together with pomgranate-bark.

(1) Andar is a village a mile distant from Halebus, where there is a famous salt-mine. See *Maundrell's Journey*.

Now

Now, should they dry up by this means, it is well : if not, take some of the whitest bole, but never use the red sort : throw upon it about a tenth part of Andar-salt, and a tenth part of crums of bread. Then use the liniment, and let it alone for an hour or two ; after that wash it off.

Now follows the method of removing the escars, or scabs, and the dry scales.

C H A P. X.

How the dry Scales and Eschars are to be removed.

AFTER the *Small-Pox* are intirely dried up, and there remain in the body scales and dry eschars ; examine which of them are thin, and perfectly dry, without the least drop of moisture under them ; and drop upon them hot oil of sesame, every now and then, till they grow soft and fall off ; unless on those in the face : for those must be cured with pistacho-nut oil. But in regard of those, that resemble eschars, and are of some bigness ; in case you observe any moisture under them, remove them by taking off the skin, and snipping them cautiously, without using

using any oil to them. But if the places, from whence they are separated, have not much moisture; they must be dried with a fine cotton-rag, as I before mentioned. But, should they abound with humidity, they must be dried by degrees; and the red aromatic powder sprinkled on them, composed of aloes, frankincense, sarcocol, and dragon's blood; especially, if they begin to diminish, and subside; and alum and Andar-salt must be used, if they are agreeable to the rest of the surface of the body, and the pustules do not subside: then acquiesce, till a fresh eschar or scab grows over it. Should there, notwithstanding, arise more moisture, recur to the same method of cure. But, in short, if no farther moisture appears; anoint those places with oil, till the scabs, grown quite loose and withered, drop all off.

Now follows what I have to say concerning effacing the marks of the *Small-Pox*.

CHAP. XI.

How the Marks of the Small-Pox are to be effaced.

THE marks of the *Small-Pox* are twofold: and are either in the eye, or in other parts of the body. And, indeed, as

to the eye, the place of it, affected by the *Small-Pox*, has, as I have already observed, a dark white speck in it. If that befall the eyes of children, or infants, both of a moister temperament of body, and of a finer skin, it will be deterged with the greater ease.

Now medicaments, that will deterge the eye, and remove this white speck, are the following: *viz.* Borax, Andar-salt, salt-ammoniac, sea-froth, the dregs or dross of glass, sea-crabs, sparrow's and swallow's dung, and that of starlings and mice, the excrement of an Arabian or Libyan lizzard, galingale, ebony, cornel-water, coral, tutty, blood-stone, verdegrease, Arabian sugar, the dregs of vinegar burnt, the scum or sediment of urine, myrrh, red orpiment, or juniper-gum, commonly called varnish, gum of the olive-tree, gum of the bitter almond-tree, the milk or juice of wild lettuce, glass, the dung of cats, and musk. The most seasonable time, for the application of any of these specifics to the sick, will be on his coming from bathing, or after he has been holding his head over the steams of hot-water. But it will be necessary to pitch upon the milder sort of these, especially in soft and moist bodies.

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THE description of a gentle remedy, that takes away the white speck from the eye.

LET the eye be sprinkled with sarcocol, and white sugar-candy.

ANOTHER more efficacious.

LET the eye be sprinkled with sea-froth, sarcocol, and sugar.

AND one still more efficacious.

LET the eye be sprinkled with borax, sea-froth, the dregs or dross of glass, sarcocol, and sugar.

AND one yet stronger than that.

TAKE ten drachms of verdegrease; myrrh, sagapenum, salt ammoniac, sarcocol, of each two drachms and a half; sea-froth, dross of glass, and borax, of each three drachms. And take of galingale, or calamus aromaticus, ten drachms, and as many of cornel-water. Let these boil in ten times the weight of water, till the water becomes thick; then dissolve the gums in it: let the residue be mixed all together, and formed into ophthalmic collyria. After that, as often as it shall be necessary, to this water add ebony in an oil jar: then, taking a probe or a bodkin, with
that

that deterge the place of the eye, that is diseased, gently, and frequently. And apply the liniment often, both before and after. Lastly, sprinkle on it the milder medicinal powder. Nor moreover forget to examine the eye carefully and constantly. For if it be painful and looks red, defer this treatment for some days; afterwards repeat it: inasmuch as this method of cure is very effectual and well grounded.

As to the medicaments, devoted to the abolishing the marks of the *Small-Pox*, that pit the face and other parts of the body; they are these, viz. white litharge, the roots of Indian-reed dried, rotten bones powdered, sea-froth, coral, sarcocol, almonds, birthwort, myrobalans, radish-seed, the seed of water-melons, rocket-seed, bean-flower, and ground rice, the flower of lupines, and of rasels: sprinkle upon these the lees of oil, and barley-water.

THE description of a liniment, which takes out the pits of the *Small-Pox*.

TAKE pease and bean-flower, of each three drachms; five drachms of water melon-seed; two drams of white litharge; three drachms of *Indian-reed-roots* dried. Bruise these altogether in barley-water; then make use of it as a liniment successively, on the
sick's

sick's having been receiving the steams of hot water, or on his just coming out of a bath. Then let him be bathed afresh with a decoction of the rind of water-melons, and dried violets, and bran, and pounded pease; then rub him thoroughly, and, in the last place, apply the liniment.

THE description of another liniment more efficacious.

TAKE five drachms of bean-flower; bitter almonds, sweet rocket-seed, and radish-seed, of each two drachms and a half; apply it, as we have prescribed.

ANOTHER liniment still of greater efficacy.

TAKE five drachms of bitter almonds blanched; radish-seed, rocket-seed, roots of costum, long birth-wort, of each two drachms and a half; also three drachms of borace; a drachm and a half of pepper; apply it, in the manner, I before directed.

THEN wash the spots with radish-water, or make use of those things we specified above. And these are the means, which effectually cancel the traces and scars of the Small-Pox.

Now,

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Now, as to what regards the rendering of the skin sleek and smooth, proceed in this path: let the person be dawbed all over with butter, and his body well tinged with the herb cyperis, or the powder of it; let him bathe frequently, and be well rubbed.

WE must now point out what is necessary to be given to one labouring with the *Small-Pox* by way of aliment, and treat of the medicinal part, relating to this affair.

CHAP. XII.

Of the Diet of those labouring with the
SMALL-POX.

WHOEVER labours with the *Small-Pox* must drink barley-water, prepared agreeably to the same method and art, as that which is usually administred in acute and feverish disorders; and, in case the fever be milder and more composed, and the body a little bound, it must be sweetened with some white sugar-candy. But should the heat be violent, accompanied with a looseness, mix with it half a measure of the juice of acid pomgranates, bruised along with the kernels: but be cautioned against making use

use of the pulp, and the thin inner peel; for those will increase the looseness.

If the sick, moreover, should be uneasy and restless, add to the barley-water a proportion of poppies. And should the belly be very lax, throw into the barley-water one part of dry pomgranate kernels, and one part of poppies. But in case it be requisite to bind the body, instead of barley-water, use barley-gruel, and a decoction of pomgranate kernels. Boil these as you do when you make barley-water, and let the sick drink of each of them, as he would drink of the barley-water, either by themselves, or with a mixture of Bambú-sugar, and gum Arabic, if a looseness subjects you to that necessity; or jointly with the medicines we shall describe by and by. For barley-water, mixed with pomgranate juice, is of great efficacy in the *Small-Pox*, and more so in the *Measles*. But gourd-water, and Indian pompion-water, cucumber-water, the mucilage of flea-wort-seed, and such like, of the kind of those things, which generate phlegm no ways purulent, and easy to be spit up: the water, I say, of these simples is more serviceable in the *Measles* than in the *Small-Pox*; unless by chance in those *Small-Pox*, that are attended with an immoderate depravity and heat, together with a violent fever and want of sleep. But in those *Small-Pox*, where the fever is not so

violent and inflammatory, the forementioned things, and all of that class, only render their eruption slower, and protract the disease : for which reason, it will be incumbent on you to recur earnestly to these or those remedies, or to use no remedies at all, just as circumstances shall require. For when the *Small-Pox* shall be in their greatest degree of heat and putrefaction, with a complicated mixture of moisture ; then coolers, dryers, agglutinants, are very proper for them ; such as pomgranate juice, verjuice, and the like.

BUT when the *Measles* are the case, that take their rise from an ebullition of the bile mixt with a violently hot blood ; then those things, that are endued with a cooling and moistening property, are particularly adapted to their cure : inasmuch as by their beneficial quality the corrupted blood is tempered and corrected. For the blood of a man in the *Small-Pox* is like standing water, that has been a long time putrefied, having lost its virtue, and, through the heat of the sun, contracted a vitious acrimony. But should either rain, or water from any sweet current, be mixed with that stagnating pond, it immediately recovers by that means its former wholesomeness.

MOREOVER, in the *Small-Pox* barley-gruel is serviceable, if it be taken with sugar, and
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pomgranate-juice, or with as much julep, as is necessary; an eye being had either to the lax or bound state of the belly, as also to the greater or less degree of heat: only with this difference, that barley-water is lighter to take, easier to swallow, and more agreeable to the throat and breast. Wherefore act accordingly, now you know that barley-water is more proper in the *Measles*, than in the *Small-Pox*; unless the *Small-Pox* should chance to turn out a very bad sort, as has been hinted. As to the rest, vetches, well cleansed, and mixed with pomgranate-juice or vinegar, are of service in the *Small-pox*: as is likewise a soup from them, if the vetches be first put o' soaking in cold water. You must know too, that cold water is better for one in the *Measles*, than in the *Small-Pox*, being both safer, and of more certain effect.

BUT when you observe a great inflammation to accompany the *Small-Pox*, and an intermission in the pulse and respiration; then recur to coolers, in proportion to these symptoms: but if there be little or no urgency of this nature, be sparing in the use of them; should the case be otherwise, indulge their administration. But never allow the eating of a chicken, before the pulse and respiration are returned to their natural state, nor till the *Small-Pox* are intirely dried up, and the scales fallen off.

I SHALL now lay down some rules in regard of either loosening, or binding, the belly in the *Small-Pox*.

C H A P. XIII.

Of the Regimen of Nature, or of the Belly of one labouring with the SMALL-POX.

THE belly is generally loose in the *Small-Pox*, and *Measles*, towards their declension; in the *Measles* especially. Wherefore one must avoid every thing that relaxes the bowels, when the *Small-Pox* and *Measles* are drawing towards an end, although there be a costiveness. But, should the body be open, abstain absolutely from whatever is of a laxative nature: though in the beginning of these two illnesses, and before their declension, it was requisite to procure some stools. For sometimes there is a necessity for this practice in the *Small-Pox*, as well on account of an excessive heat, and head-ach, as of easing nature of her burthen, and lessening the variolous matter; when, for example, you have reason to suppose it too abundant. Which, indeed, will be the case, if you find the body, both before and after bleeding, to be no ways weakened or attenuated; but,

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on the contrary, inflated and full, with a paleness, or a small redness, and with a fluctuating, uneven, pulse. For sometimes, in such a situation, there will be no necessity for taking away any blood, but only for an evacuation of the superfluous humidity: and that chiefly, when the aforementioned signs have most evidently appeared; or if the body, moreover, through the fever's not exerting itself, is become dejected, and altogether exhibits a pallid appearance. To such circumstances, as these, nothing is better accommodated, than a decoction of myrobolans, sweetened with loaf-sugar, and impregnated with the juice of two or three pomgranates, bruised with the pulp, and inner peels, all together. For such is the property of these simples, that they clear the blood of its redundant humours, and a proportioned quantity of the bile, without exciting any heat, (especially, the pomgranate-juice) or leaving any lodgment behind them in the belly. And this is the best remedy, that is practicable in this case.

. BUT in the *Measles* give the juice of damascenes, and the damascenes themselves, when they are fresh, either separately, or bruised along with a julep: tho' not without the addition of sugar. But omit the medicine

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dicine called Tarangioben (1): as it is equally hurtful to those, who have got the *Measles*, as honey is to them, who are seized with the *Small-Pox*, on account of the intense heat, it is apt to bring on; as also, because it generally proves exceedingly nauseous and disagreeable to the sick. By the same rule be guarded against exhibiting the juice of ivy; or that of the black violet: as both of them aggravate whatever complaint is subsisting in the constitution.

BUT, as the principal and most necessary remedy in the *Small-Pox*, is to take away blood, when that fluid is too abundant, and all other hopes of restraining its ebullition are cut off, even tho' you give coolers; when you must, notwithstanding, draw off a little, as well to ease nature, as to remove the distension of the vessels, and to free them from their preternatural plenitude, which would otherwise be attended with the worst of consequences; particularly, should the blood be heated to that degree, as to be subjected to a great inflammation; after the same manner, in the beginning of the *Measles*, it will be incumbent on you, to lessen the

(1) This is a Sort of Manna among the *Sogdians*, *Medes*, and *Babylonians*, which coalesces on the leaves of particular Shrubs, from whence it is gathered.

quantity

quantity of the bile, when you find it redundant; and then, as to what remains of it, to manage it by coolers. An infallible sign of the predominancy of the bile is a violent inflammation and an uneasiness, and a voiding of it both by vomitings, and stools, and a bitterness in the mouth. But, if the bile be not excessive, and yet there subsists a disquietude, and thirst, and vehement heat, independently of any bile's being discharged, either upwards or downwards; tho', as I say, the bile be not excessive, yet, be that as it will, one ought to judge it of a depraved nature, in proportion to the violence of the inflammation, and uneasiness.

AND this is what was worthy of your notice concerning the regulation of the belly, when it is loose, on the invasion of these two illnesses. But, in case the body be open, give nothing endued with a laxative faculty: for, in these ailments, too great a discharge by the intestines is not safe, if the sick, in either of them, drink any thing purgative. But, during this lax state of the bowels, instead of barley-water, order barley-gruel; and, if it be necessary, boil the barley-gruel with a decoction of pomgranate kernels; and let this be taken, in case of a looseness; but taken before the barley-water. But,

should there be a violent looseness, let gum Arabic accompany the use of it, and Bambu-sugar. For example, take two drachms of gum Arabic; one drachm of Bambu-sugar; beat them together after the manner of a collyrium; then stir into four ounces of the barley-gruel, for the space of an hour, some of the medicine, I am going to describe: then give it the sick to drink.

A description of the medicine.

TAKE equal parts of red-roses bruised, Bambu-sugar, wild sorrel-feed, sumac, and berberries; also gum Arabic, sealed earth, poppy-heads, balaufts, or pomgranate flowers, of each half a part: let the sick take three drachms of these, with an ounce of the juice of four quinces.

BUT, should the stools still continue, so as to be very weakening to the sick; let him take al-raib, or whey; with some of the finest biscuit, and a little gum Arabic.

In the last place, whenever a dysentery comes on, the cure of that disorder must be sought for, where we have made mention of that circumstance. It now remains, that we treat of those, who are recovering, and
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of those that die, of the *Small-Pox* and *Measles*.

C H A P. XIV.

Of the Curable and Incurable Small-Pox and Measles.

THE *Small-Pox* and *Measles* are of the class of hot diseases; for which reason there are several appearances in them common to those disorders. And, indeed, the principal prognostic signs in respect of persons, that are recovering, are the following: an easy respiration, a perfect soundness of mind, and an appetite for food; an agility of body; a regular pulse; a good opinion in the sick of his own illness; a convenient posture of lying in bed; and but little tumbling and tossing of the body. And the same is to be said of the bad signs, part of which we enumerated in a treatise, entitled (1) *Al-mansori*.

What follows peculiarly regards the *Small-Pox* and *Measles*.

(1) The manuscript Copy of this treatise is extant in the Bodleian Library, *Narcis. Marsh. N^o. 376.*

THE pustules in the *Small-Pox*, that are white, large, distinct, few in number, of a ready and easy eruption, accompanied with no high, violent, or burning fever; nor any considerable anxiety and inquietude; and of so kindly a disposition, that, immediately on their exit, the sick finds a great abatement of heat, oppression of spirits, and uneasiness; and, after a compleat eruption, a perfect tranquillity; such a sort is curable, and not very dangerous. Next to these in goodness are pustules, that are white, and large, tho' they are thick and confluent; so as they come out easily, and, on their appearance, relieve the sick from his restlessness and too great heat, as we have intimated. But when their eruption is with difficulty, and the sick, while they are coming out, finds none of his complaints to vanish, these are a bad *Small-Pox*: tho' one's apprehension should not be measured so much from the state of the sick, while the eruption is performing, as from the inconveniences he labours under, after a full protrusion.

MOREOVER, there is a particular kind of *Small-Pox*, that is of a depraved and mortal nature: namely, those that are at the same time confluent, and spread themselves to such a degree, that they run into one, and form

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form great blotches; or look like circles of great circumference, and in colour resemble suet. As to the pustules that are white, very small, confluent, hard, warty, and dry, those are a bad sort; and their depravity is in proportion to the difficulty of their maturation, and the little relief that accrues to the sick from their eruption. But if, after their compleat exit, he still perceives himself distressed, it is a mortal sign.

THOSE pustules, moreover, that incline to a green and a violet colour, as also what degenerate into a black, all these are bad. Again, should the sick faint, and have a palpitation of the heart; this is the worst symptom of all, and a certain sign of death. And when the fever increases after the eruption is began, it is a bad sign. But if it go off during the exit of the *Small-Pox*, it is a sign of recovery. Complicated pustules are an indication of an abundance of matter: but in case they are of a curable kind, that circumstance prognosticates health; if of an incurable, immediate death.

THOSE *Measles* are the safest, that have not too much redness: and if they turn to a pale colour, it is a bad omen; but the green, and the violet-complexioned, are both mortal. And when either the *Small-Pox*, or
Measles,

Measles, all on a sudden subside, after they have began to peep out, then shew themselves again with disquiet and anxiety, with a deliquium, it is a sign of approaching destruction; unless, after their retreating, they emerge afresh.

SHOULD the *Small-Pox* appear the first day the sick begins to grow feverish; those will advance a-pace, and be of quicker motion: if they defer their exit till the third day, they will move moderately; but in case they exceed the fourth, their progress will be quite slow and heavy. When they come out on the good critical days, this is a salutary sign, especially, if the sick be less oppressed at the end of the eruption; and so *vice versa*. But when the *Small-Pox* begin to run all into one another, and to spread themselves, and that with an increase of uneasiness, and an inflation and turgency of the belly, death then is at hand. When the smaller sort of *Small-Pox*, that have no moisture, grow hard, together with a delirium, the person so affected has not long to live. When the *Small-Pox* and *Measles* now appear, now withdraw themselves, and this is followed by an anxiety, and light-headedness, let the colour of the pustules be what it will, it is a sign of death: tho' this rarely happens

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pens in the case of white pustules, or of those, that arrive at maturation, and soon grow watry. When, towards the end of the distemper, there arises a tumult in the body, and the sick from thence is seized with a most violent pain, either in his leg, or hand, or any other limb; or the pustules all on a sudden turn green and black; the strength after that decaying, and, from a frequent return of the pain, growing more and more impaired, and the limb affected contracting a variety of colours; these are mortal signs. Yet, notwithstanding, if the strength increase, the sick will recover, and the diseased limb will be restored to its former healthy state. Should you also scarify this limb the very moment it is seized with pain, in case the sick be better after the incision, you will very much help him, and the limb will likewise be preserved from mortifying. But one must on no account whatever, in so precarious a circumstance, apply any thing to this limb of a cooling nature; but either scarify it, or merge it in hot-water, if you find the sick to be no ways inconvenienced afterwards by such a proceeding.

WHEREFORE, as we have now run over all the articles we proposed to ourselves, and have sufficiently enlarged upon this disease,
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and the method of preservation from it, we break off the thread of our discourse.

To the Giver of strength to perfect this work be praise without end, as he is worthy to be celebrated and praised.



any other kind; and the strength after that decaying, a frequent return of the pain, growing more and more impatient, and the mind affected with a variety of colours: these are mortal signs. Yet, notwithstanding, if the strength increase, the sick will recover, and the distressed mind will be restored to its former healthy state. Should you observe these signs, I advise you, moment it is observed, with pain, in such a manner, be better than the action, you will vary much help him, and the lamp will likewise be preserved from extinction. But one must on no account, without in to procure one a circumstance, applying to this kind of a cooling nature; but, if it is already in, or emerges, hot water, is you find the patient does any inconvenience, afterwards by such a procedure.

What we have now to say, is, how the over all the body is provided to our help, and if we are to be applied upon the subject.

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